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A COMPARISON OF FACTORS PRESENT IN BACKGROUNDS OF INDIVIDUALS USING SELECTED MODES OF MOBILITY

A Dissertation Submitted in Partial Fulfillment
of the Requirement for the Degree of
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ABSTRACT

Davey, Bobbe Lytle. "A Comparison of Factors Present in Backgrounds of Individuals Using Selected Modes of Mobility." Unpublished Doctor of Education dissertation, Colorado State College, Fall, 1967.

In this retrospective study, the backgrounds of a number of blind individuals were studied to determine what factors were present in visually impaired individuals using different modes of mobility. The backgrounds of subjects using different selected modes of mobility were compared. The population in this study was divided into two groups on the basis of mode of mobility. Group I, fifteen cases, used cane or dog guide as the principle mode of mobility; Group II, ten cases, used a human guide as the principle mode of mobility.

Within the limits of this study it was found that those with a higher IQ tended to select the cane or dog guide as a mode of mobility. This was significant at the .05 level. Individuals rated as more independent tend to be more mobile. This was significant at the .05 level. Within the limits of this study it was found that those who were more physically fit tended to be more mobile. This was significant at the .05 level. Within the limits of this study the researcher was unable to establish a

relationship between family attitudes and mobility. In this study the Bauman Emotional Factors Inventory was used to rate personality adjustment. There was a positive relationship between mobility and every subscore on the Bauman scale. It was found that those who were totally blind tended to be more mobile.

In this study a special dimension of the Bauman Scale was created in cooperation with Mary K. Bauman, author of the scale. This includes selected items from the Bauman Scale which were suggestions by Bauman. She felt these selected items might possibly tend to indicate a tendency toward dependency. This was the first of the special dimension category. The special dimension category was correlated with the independent rating made by the vocational rehabilitation counselor. The counselor used personal interviews to rate the independent or dependent tendencies exhibited by the subjects. This was significant at the .05 level.

Within the limits of this study certain factors seemed to be more strongly operative in the backgrounds of more highly mobile blind persons than seemed to be present in the backgrounds of those who were less mobile. The factors which seemed to be more strongly operative in the backgrounds of individuals who used the cane or dog guide as a mobility device were: (1) higher IQ, (2) cane or dog guide as the principle mode of mobility, (3) greater physical fitness, (4) better personality adjustment, (5) totally blind or greater degree of blindness, and (6) more independent personality tendencies.

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CHAPTER I

INTRODUCTION

In countries all over the world severe impairment of man's eyesight continues to occur in so many of our populations that the numbers have a discouraging ring. Experts have said that somewhere between ten to fourteen million people in the world today are blind. This estimate includes those with vision impaired in such a way as to be uncorrectable, and those who are totally blind. Jablonski, an authority in the field of rehabilitation of the visually impaired, states that even in America, one of the most progressive countries in the world, the problem of blindness is increasing faster than the population. This phenomenon is due mainly to the fact that people are living longer than they formerly did. Blindness seems to be a function of age, as well as of the insufficient awareness on the part of the general public concerning tests and cures which are available and which can alert persons to oncoming blindness in time for them to take preventative steps.[1]

Even now, in spite of these discouraging and bleak figures, there exists a marvelous and practically unrelated story. Man has made and is continuing to make far-reaching advancements in the direction of a mediating victory over the handicaps due to blindness. Training the blind population in orientation and mobility within their environment is one of the positive steps which can be taken toward helping them to rise above and to conquer their problems.

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[1] Edward Jablonski, "Man's Conquest of Blindness," The American Legion Magazine (December, 1965), p. 18.

The words "orientation" and "mobility" have very often been used interchangeably by writers of professional literature in the field. This has had the unfortunate tendency to add a note of confusion for those trying to read the literature in these two areas. The meaning usually ascribed to these two widely used terms indicates that it is possible for the blind person to navigate within a certain surrounding. "Orientation" is considered to be a cognitive competency enabling the blind person to know in his mind where he is in regard to both his immediate and his more distant surroundings. Lowenfeld states that mobility contains two component parts: physical movements and mental orientation.[1] Physical movement is the ability of the individual to move from place to place by means of body movements.[2]

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[1] Berthold Lowenfeld, "Psychological Foundation of Special Methods in Teaching Blind Children," in Blindness, ed. P. A. Zahl (Princeton, New Jersey: Princeton University Press, Reprint Edition, 1963), p. 91.

[2] Dictionary of Psychology, ed. Howard C. Warren (Boston: Houghton Mifflin Company, 1934), p. 154.

Mental orientation is the ability of the person to recognize his environment and his relationship to this environment.[1]

For the individual who is totally blind or who perhaps has only light perception, the task of moving about in his environment is indeed a difficult one to perform. According to Chevigny and Braverman, the most intricate expression of competency for the blind individual is his ability to navigate in his environment and to do so independently.[2] The area of mobility is lacking in research pertaining to the psychological factors which are involved. Research was conducted at the beginning of this century on obstacle perception by European scientists. Supa, Cotzin, and Dallenbach, circa 1940, did some work on obstacle perception in this country.[3] Facial vision or obstacle perception appears to be only one of several factors of prime importance to the blind individual and his ability to get around in his environment.

In this retrospective study, the backgrounds of a number of blind individuals were studied to determine whether background is a contributing factor in the individual's selection of a mode of mobility. The backgrounds of individuals using selected modes of mobility were compared. Through this comparison an endeavor was made to determine certain selected factors which individuals using one mode of mobility possess that are lacking in those persons using other modes of mobility.

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[1] Ibid., p. 189.

[2] Hector Chevigny and S. Braverman, The Adjustment of the Blind (New Haven: Yale University Press, 1950), p. 3.

[3] M. Supa, M. Cotzin, and K. M. Dallenbach, "Facial Vision, The Perception of Obstacles by the Blind," American Journal of Psychology, LVII (1944), 133-83.

Statement of the Problem

Mobility is a topic which has been recently receiving much attention by those interested and working in the area of the visually impaired. In this study an effort was made to determine what characteristics may be present in visually impaired individuals using different modes of mobility. One of the main reasons for this divergent thinking is that educators working in the field have not been aware of the individual parental attitudes, psycho-social attitudes, and certain other factors in the background of blind persons who use one of the selected modes of mobility as compared to those using another selected mode of mobility.

Hypotheses Tested

The following null hypotheses were tested in this study at the .05 level of confidence:

1. There is no significant relationship in IQ and modes of mobility.
2. There is no significant relationship between different modes of mobility and independence.

3. There is no significant relationship between individuals with additional physical disabilities and mode of mobility.
4. There is no significant relationship between supportive and non-supportive family attitudes toward the mobility training of the blind individual and mode of mobility.
5. There is no significant relationship between current psycho-social adjustment, as measured by the Bauman scale, and mode of mobility.
6. There is no significant relationship between visual acuity and mode of mobility.

Justification of the Study

As a result of this study it is hoped that certain factors which were brought to light will make a contribution to the complex problem of mobility learning. "The amount of research on orientation and mobility is not great. Much of it could be read on a rainy Saturday afternoon."[1] Many articles have been written stressing the importance of mobility, but paradoxically there is a dearth of research in this area."[2] As time passed, little research in the area of mobility training was done, while generations of visually impaired have been trying to make the public understand that their ability to be physically independent was as important to their welfare and well-being as a good academic background.[1]

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[1] Jeanne Kenmore, Tennessee School for the Blind, "Some Aspects of Mobility Instruction for the Blind Children," Forty-fifth Biennial Convention of American Association of Instructors of the Blind, Inc., Proceedings of the Meeting (Denselson, Tennessee: The Association, 1960), p. 238.

[2] Samuel C. Ashcroft, "The Visually Handicapped," Review of Educational Research, XXXVI, No. 1 (February, 1966), 88.

"There are enough unanswered questions about mobility of blind children to keep research centers busy for years."[2] Ashcroft states in regard to research in the field for the visually handicapped: "A new era in research is needed to match the new era in education."[3] "Investigators believe . . . the general situation in regard to travel performance disclosed by their study challenges the whole field of service to blind persons."[4] Research is needed in the area of mobility for the blind in order to produce some answers concerning what kind of a program is needed to help the blind population become more mobile.

Delimitations of the Study

The present research was conducted with blind persons in the Denver (Colorado) area. A total number of twenty-five subjects was used in the research.

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[1] Kenmore, op. cit., pp. 26-32.

[2] Ibid., p. 32.

[3] Ashcroft, op. cit., p. 88.

[4] Seeing Eye, Inc., The Importance of Mobility to Blind People and the Potential Need for Dog Guides, A summary of the major findings of the Demeand for Dog Guides and the Travel Adjustment of Blind Persons (Columbia University: Research Center of School of Social Work, 1960), p. 4.

The delimitations of the study were as follows:

1. The study was retrospective in nature.
2. The study did not include any subject presently attending high school.
3. The study did not include any subject if he was classified as partially sighted.
4. The study did not include any individual unless he used a mobility device or a sight guide as a mode of mobility.
5. The study did not include any subject who used an electronic mobility device of any kind as a mode of mobility.

Definition of Terms

IQ.--The measurement and appraisal of individual intelligence, as contained in the subjects' case files.

Additional physical disabilities. The presence of other physical disabilities as noted in the medical record, other than vision, as given in the subjects' case files.

Mobility.--The term used to denote the ability to navigate from one's present fixed position to another part of the environment.[1]

Mode of mobility.--The method used by the visually impaired to navigate from one position to another part of the environment.

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[1] Stanley Suterko, "Orientation and Mobility Terms" (Hines, Illinois: Rehabilitation of the Blind, VA), p. 2. (Mimeographed.)

Individuals in this study used the cane, dog guide, or human guide as a mode of mobility.

Family attitude toward mobility training.--Whether the family attitude toward travel training and travel was supportive or non-supportive, as measured by the attitude scale shown in Appendix B.

Psycho-social adjustment.--Absence of personality manifestation which may appear to stand in the way of the individual's adjustment, as measured by the Bauman scale.

Visual acuity.--Visual acuity of 2/200 down to total blindness is not considered useful travel vision.

Cane travel.--When the principle mode of mobility is the use of the cane.

Dog guide travel.--When the principle mode of mobility is the use of the dog guide.

Human guide travel.--When the principle mode of mobility is a seeing individual used as a guide in travel.

Dependent.--Relying on someone besides oneself for support in all areas of life.

Independent.--One who controls or governs himself in all areas of life.

Mobility independence.--The ability to travel from place to place with the aid of a dog guide or a cane.

Mobility dependence.--The ability to travel from place to place with the aid of a human guide.

Orientation.--The process of utilizing the remaining senses in establishing one's position and relationship to all other significant objects in one's environment.[1]

Legally blind.--According to the medical definition of blindness, a person is blind if he has central visual acuity of 20/200 or less in the better eye with corrective glasses; or central visual acuity of more than 20/200 if there is a field defect in which the peripheral field has contracted to such an extent that the widest diameter subtends an angular distance no greater than twenty degrees.

Partially seeing.--Individuals with visual acuity of 20/70 to 20/200.

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[1] *Ibid.*

CHAPTER II

REVIEW OF THE LITERATURE OF ORIENTATION AND MOBILITY WITH VISUALLY IMPAIRED INDIVIDUALS

In reviewing the proceedings of the American Association of Instructors of the Blind biennial conventions, this writer found that from the years 1853 to 1887 no mention was made of the teaching of methods of mobility in order to facilitate the blind child's navigation in his environment. In 1888, Swann reported to the Convention on the results of a study made on facial perception. He postulated that use of skin perception was achieved better by the totally blind individual, and the degree of hearing in the individual did not affect this facial perception.[1]

In 1910, Henderson presented a paper on the practicality of gymnastics and other activities used in physical education. Henderson urged the practice of gymnastics for a period of at least thirty minutes per day in order to improve the blind child's carriage, facilitate his locomotion and orient him to directions of up and down, forward and backward, to each side, as well as in and out. Henderson averred that such practice would improve the blind child's ability to get about.[1]

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[1] R. W. Swann, Proceedings of American Association of Instruction of the Blind, Biennial Convention (Baltimore, 1888), pp. 31-38.

In 1930, Cox reported to the convention that the very nature of blindness itself caused the blind youngster to maintain a tense posture, and that this tenseness is due in part to an unconscious desire to protect himself from any possible bodily harm inasmuch as he cannot see what is taking place in his environment.[2] Cox maintained that methods should be employed to build the self-confidence of the blind child through appropriate training from a teacher who is interested in the needs of the blind individual.

In 1934, Kappes addressed the convention on the matter of rhythm and the blind child. She discussed the problems relating to muscles, space, and time, and their relationship to rhythmic training. Kappes reiterated earlier workers in the field that the blind child should be helped to overcome the limitations of his experiences, namely that these limitations are due in part to the difficulties which he has in moving about in his environment and to the problems which he has in manipulating objects in relationships to his environment.[3]

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[1] Olivia Henderson, Proceedings of American Association of Instructors of the Blind, Biennial Convention (1910), pp. 78-81.

[2] A. H. Cox, Proceedings of American Association of Instructors of the Blind, Biennial Convention (1930), pp. 538-41.

[3] Marion Kappes, Proceedings of American Association of Instructors of the Blind, Biennial Convention (1932), pp. 789-92.

In 1938, Landis reported to the convention on his twelve stages of specialization in which he contended the blind child could participate in athletics. Landis felt that athletics was the medium through which the blind child could best increase his abilities to orient himself in his environment and to overcome the problem of mobility for himself in his environment.[1]

After reviewing a number of American Association of Instructors of the Blind convention proceedings, this writer concluded that prior to 1887 little if any attention was paid to the problem of orientation and mobility in the training of the blind child. As one reads the convention proceedings after this date, a gradual awareness of the need for orientation and mobility training for the blind child becomes noticeable. Many of the practices, activities, and techniques suggested earlier precluded the use of the more exact and precise techniques employed and utilized today in training the blind child in orientation and mobility.

Modes of Mobility

Development of dog guide training

The development of modes of mobility for the blind has largely followed the trial and error method of experimentation and has, therefore, been productive of empirical evidence as to the different modes of mobility for the blind which are presently used. One such mode is the use of a dog guide.

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[1] Merle B. Landis, Proceedings of American Association of Instructors of the Blind, Biennial Convention (1938), pp. 91-96.

According to Coon, a book was written and published in 1856 by a blind man, Abram V. Courtney, who was one of the early pupils of the Perkins school. This blind man did not want to be an object of charity so he went to the Perkins school in 1851. There he selected a dog which was part Newfoundland and part Spaniel. This dog seemed to know that his master was blind and was careful to keep him away from all danger. He learned by name the different shops and other places his master wished to go. For example, if the dog's master told him to go to the barber shop, the dog took him there. However, the dog was in the habit of going to certain places with his master and so he was able to learn the way to different places. The dog did not possess the intelligence to take his master to a new place where the dog had never been before simply upon being given a name of a desired destination by his master. Dogs are, however, able to learn their way to different places after having been there several times. This blind man had trained his dog in the techniques of being a dog guide.[1]

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[1] Nelson Coon, A Brief History of Dog Guides for the Blind (Morristown, New Jersey: The Seeing Eye, Inc., 1959), p. 40.

According to Chimani there is an account telling that in 1755 in Vienna a young man of seventeen years of age lost his sight. Not wishing to beg for his needs, he secured a dog and trained him to act as his guide. By sharing his food with the dog and keeping him at his side, he trained the dog to guide him every place he wanted to go, to show him where to walk, and to avoid curbs, stairways, and other obstacles. The blind man married but never allowed his wife to act as his guide. He continued to keep his dog guide with him wherever he went, and it was said that his dog took him safely through heavy traffic where sighted people would hesitate to go. This blind man, Joseph Reisinger, always trained another dog guide when his present dog died or became too old to continue his service. He trained several dog guides for himself during his life time.[1]

Early methods of training a dog guide can perhaps be partly attributed to Reisinger. The invention of the rigid harness and a rigorous pre-trained schedule by a sighted person can most likely be credited to Father Klein of Vienna. In 1819, Father Klein, in his Textbook for Teaching the Blind, sketched an outline for training dogs as dog guides for the blind.[2]

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[1] Leopold Chimani, Curiosities of Lands, States, and Peoples of the Austrian Empire (Vienna: Bell, 1827), Archives of Perkins Blindiana Collection, Blindiana Reference Library, Perkins School for the Blind, Watertown, Massachusetts.

[2] The New Outlook for the Blind (April, 1956), pp. 131-33.

In 1845, in Germany, one blind man, Jacob Birrer, gave an account of how he trained a dog guide. Nageli reported that Birrer used different breeds of dogs, but he finally decided the poodle was the best kind to use. Jacob Birrer learned that in training the dog, if the dog made a mistake, he should not be punished. Repetition is always the best method in training a dog. The blind person should not allow a sighted person to help him in the training of the dog. The dog soon learns that the blind person depends upon him entirely. The dog is taught to stay always in front of the blind person while the leash is kept taut. Birrer started the training by going to a grove of trees well known to himself. If the dog went too close to a tree, he would draw the leash around the tree and then pull the dog around the tree. Of course, this was not pleasant for the dog so he soon learned not to get too close to obstructions.[1]

Next, according to Nageli, Birrer took the dog along a street where he knew there would be holes and also rocks in the street. After the dog learned how to avoid these things, he was rewarded. Sometimes, if the dog did not grasp what he was to do, he would be punished very slightly.[2]

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[1] N. Nageli, Erinnerungen, merwurdige lebensfahrten und besondere ansichten des Jakob Birrer aus dem Kanton Luzern; Recollections, Remarkable Journeys and Various Opinions of Jakob Birrer (Carlsruhe: Melsch un Vogel, 1845), Archives Perkins Blindiana Collection, Blindiana Reference Library, Perkins School for the Blind, Watertown, Massachusetts.

[2] Ibid.

It was further found in the training method that a dog does not like to be kept indoors and when the door is open, he is liable to jump through the door quickly. He must be corrected in this instance and not allowed to form this bad habit. To correct the habit an obstruction can be put across the door opening so that this has to be moved before the dog can get through.[1]

According to this account a number of different breeds of dogs can be used by blind people. It was felt by Birrer that the poodle can be trained easily, but that this breed of dog is sensitive and must not be punished while being trained. Talking kindly, coaxing them, and rewarding them with tidbits is the best method to use, as discovered by Birrer.[2]

Birrer felt that the Spitz was another breed of dog that trained well. The Spitz was stronger and did not tire easily. Birrer felt that in selecting a dog it should not be too old. Ten to sixteen months was the best age.[3]

The cane as a mobility device for the blind

One of the earliest written cases of blindness is in the Bible where the account tells of Isaac's having become blind. There is no evidence of his having used a cane, but it is possible that he used a shepherd's staff. It is written in various parts of the Bible that the blind walked alone, and they probably used some kind of a stick. Greek mythology gives an account of the prophet Tiresias who was deprived of his sight because of an offense towards the gods and was pitied by the Goddess Chariclo. She gave him a stick with which he learned to walk as well as he had before he lost his sight.

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[1] Ibid. [2] Ibid. [3] Ibid.

During the 1800's various well-known writers explained different ways that canes could be used to help the blind move about more efficiently and with less danger to themselves. At no time did any person or group of people figure out a definite technique or set of rules involving the use of the cane which could be used to help a large number of handicapped people. In spite of this, during this period the cane was used by individuals as a safe and satisfactory way for the blind to move about. This success, in large measure, could be attributed to the absence of fast-moving vehicles so common today.

It seems that there is still great need for a better and safer method by which the blind person can have more and safer means of mobility. Such a method would give the person more confidence and lessen the danger as he travels about. He would also be less conspicuous.

History records the many uses in which the cane or stick have been of great help to the people who have had to use them. The cane used to be made from various kinds of wood, but now metal canes seem to be more acceptable. History tells us that the cane or stick was used in many different ways. Some used it mostly to keep stray dogs or other kinds of animals away from them. Then the blind people would make a loud noise with the cane by tapping on the walks so that people or animals would give them the right of way.

According to Hoover the first time any organization attempted to set up a program to teach the blind how to move about without assistance was during World War II. The Medical Division of the United States Army selected several of their hospitals and ordered them to set up a program and training division to rehabilitate and train the blinded veterans. These veterans also demanded that they be trained so that they could be independent in moving about in society. The first program was teaching the blinded veterans how to use the white cane. Hoover and his associates soon discovered that this was not adequate, and the program was still filled with hopes that their methods would be improved.[1]

Hoover said cities have passed laws giving the blind people the right of way when they point their cane in the direction they wish to go. These laws that have been passed by many states are known as White Cane Laws.[2]

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[1] Richard E. Hoover, "The Cane as a Travel Aid" (Western Michigan University, Center for Orientation and Mobility of the Blind). (Mimeographed.)

[2] Ibid.

Blind children of elementary school age can be easily taught the use of the cane, and they are usually happy to be instructed in the use of any type of cane that gives them an adequate degree of mobility for themselves. Some girls of high school age who live at the state schools for the blind and who have been lead around find that after they leave these state schools they are handicapped because they have no adequate means of mobility. When they are told about using the cane so that they can be independent, they seem to think that it would be impossible for them to use a cane. They think of the cane as a large, heavy stick. They also picture themselves in the role of a beggar walking along pounding a heavy stick. In his report, Hoover said the younger girls are easier to manage in regard to using a cane as a mobility device, and there is no problem in teaching them to use a cane properly. He also states that when adult women become blind, it is quite difficult to induce them to accept training with a cane to make them independent.[1]

Being taught the proper way to use a cane is as necessary as any part of the educational program, Hoover believed. The proper use of a cane or some mobility device is essential to the rehabilitation of any blind individual. The very young or the old should receive the same careful education in the use of the cane as a mobility device.

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[1] *Ibid.*

The human guide as a mobility device

According to Jablonski, in a certain section of Africa there is a river disease that causes many natives to go blind. These blinded people are led by sighted people wherever they need to go. In this instance the individuals who take the role of human guides are children. A long pole is held in the hand of the blinded adult while the child grasps the pole at the other end. In this manner the child leads the blinded adult wherever he has to go. As these children grow older they in turn contract the same disease, and they must then be led by another sighted child.[1]

In the early part of the present century, few, if any, of the blind population in this country traveled extensively alone. According to Voorhees, in those days and even so today, the blind person who employed a human guide usually didso for one of several reasons--that they did not possess the necessary confidence to travel alone, that they did not have the opportunity to develop their own skills in mobility in the earlier days, or that a sighted individual was accessible to fulfill the role of the human guide whenever a means of mobility was needed.[2]

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[1] Jablonski, op. cit., pp. 18-21, 35, 38-39, 41.

[2] Arthur Voorhees, "Professional Trends in Mobility Training," Standards for Mobility Instructors (New York: American Foundation for the Blind, Inc., 1962), pp. 11-23.

Most writers in the field agree the blind have felt the need for some kind of a mobility device since early times. The use of a mobility device by blind persons makes it much easier for them to get about in their environment.

Facial Vision or Obstacle Perception

According to Jerome and Proshansky, obstacle-sense is a term which is commonly used when referring to the sensory system by which means selected blind individuals are supposed to have the ability to sense obstacles in their environment while they are still some distance away from these obstacles.[1]

James talked to certain selected blind individuals concerning obstacle perception. After his discussion and upon doing some experiments with blind individuals, he reached the conclusion that obstacle perception could be attributed to tympanic pressure.[2]

Villey conducted an extensive study of newly blinded French veterans from the First World War. He reached the conclusion that "facial vision" could be attributed to auditory clues of a threshold or near threshold magnitude. Villey found that roughly 80 per cent of these blinded French veterans demonstrated they had obstacle sense. Upon further questioning it was found that most of these blinded veterans felt that they had had obstacle sense before they became blind. They further felt that after they had become blind they had a greater need for the obstacle sense and this had caused them to develop it more.[1]

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[1] Edward A. Jerome and Proshansky, "Factors in the Assay and Use of Guidance Devices," Blindness, Modern Approaches to the Unseen Environment, ed. Paul A. Zahl (New York: Hafner Publishing Company, 1950), pp. 462-94.

[2] William James, Principles of Psychology (New York: Henry Holt and Company, 1890).

Hayes in 1935 did some experimental work which was the first of its kind designed to attempt to discover the sensory origins of the so-called obstacle sense. In this study the obstacle perception of blind and sighted subjects was compared. This study assumed that the blind are able to sense objects a greater distance from them than the sighted persons could.[2]

Supa, Cotzin, and Dallenbach conducted an experimental study in 1944 on obstacle sense. They used two blind subjects and two sighted subjects. They varied Dolanski's techniques by moving their subjects forward toward the objects.[3] Dolanski in his study on obstacle sense kept his subject at a standardized position from one trial to the next.[1]

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[1] Pierre Villey, "Le sens des obstacles chez les aveugles de la guerre," Rev. Phils. (1923).

[2] Samuel P. Hayes, Facial Vision or the Sense of Obstacles, Publications of the Perkins Institute (Watertown, Massachusetts, June, 1935).

[3] Supa, Cotzin, Dallenbach, op. cit., pp. 133-83.

Worchel and Dallenbach conducted a study in 1947 on subjects who were partially sighted and partially deaf. The conclusion of the study was that the deaf-blind do not have obstacle sense. The conclusions of the study done by Supa, Cotzin, and Dollenbach show that those who are not deaf do in fact have obstacle sense. The conclusions of these two studies make a strong plea for the idea that obstacle sense does in fact depend on auditory clues from the environment.[2]

There seem to be two noticeable limitations in all of these studies on obstacle perception. The tests were done indoors and therefore in very limited types of environment; furthermore, the studies were conducted with a very small number of subjects.

In conclusion, these studies generally favor the idea that obstacle sense is dependent on some kind of auditory cues. The more acute the hearing of blind persons, the more apt they are to possess obstacle sense.

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[1] W. Dolanski, "Les Aveugles possedent-ils le sens des obstacles?," Annee Psychol., XXXI (1930).

[2] P. Worchel and K. M. Dallenbach, "Facial Vision: Perception of Obstacles by the Deaf-Blind," American Journal of Psychology, LX (1947), 502-53.

The results of these studies show that there is a significant relationship between the auditory performance or thresholds and the mobility performance of the subjects in the studies. The more ability the blind person has to hear the auditory frequencies above the speech range, the greater was his mobility performance in these studies. It was suggested that the frequencies above the speech range were as important to the blind individual as the speech frequency of hearing range. It was further suggested that rehabilitation programs for adults take into consideration the persons' abilities to hear in the high-frequency ranges, and that in the future existing techniques used in mobility training may have to be modified to fit the blind persons' abilities to hear the ultra-speech frequencies.[1]

Supa, Cotzin, and Dallenbach[2] and Cotzin and Dallenbach[3] found from the experiments which they performed on an adult blind group that the changes in pitch as perceived by their subjects, especially in the sounds which ranged in frequencies above the 10,000 cycles per second range, gave the blind subjects the best clues.

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[1] Leo H. Riley, David M. Luterman, and Marion F. Cohen, "Relationship between Hearing Ability and Mobility in a Blind Adult Population," The New Outlook for the Blind (May, 1964), pp. 139-41.

[2] Supa, Cotzin, and Dallenbach, op. cit., pp. 133-83.

[3] M. Cotzin and K. M. Dallenbach, "Facial Vision: The Role of Pitch and Loudness in the Perception of Obstacles by the Blind," American Journal of Psychology, LXIII (1950), 485-515.

Carroll says that for a blind person a hearing loss in one ear may be as serious as a hearing loss in both. This inequality in the hearing ability between the person's two ears may alter his judgment of direction of sound and so affect his orientation performance.[1]

According to Jerome and Proshansky from the studies that have been conducted, testing and training in obstacle perception in all of its forms such as pressure, aural, and temperature should be undertaken rigorously and seriously by institutions concerned with training blind persons.[2]

According to Wright, experience with those who have impaired hearing shows that auditory training does improve the ability of some blind persons to identify sounds not previously recognized. It would seem reasonable, therefore, to assume that if a visually handicapped traveler's ability to employ auditory information is related to mobility competencies, systematic training of the auditory sense should result in an improvement of his mobility or travel skill. Wright lists four factors which make it possible to distinguish among sounds and thus will be used by the blind person to identify a particular sound. These factors are: (1) loudness, (2) pitch,

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[1] Thomas J. Carroll, Blindness, What It Is, What It Does, and How to Live with It (Boston: Little, Brown, andCompany, 1961), pp. 134-43.

[2] Jerome and Proshansky, op. cit., pp. 462-94.

(3) quality, and (4) temporal pattern.[1] Thus, it would seem that a systematic approach to auditory training for travel would result in a greater possibility of better mobility skills for the individual.

Hunter conducted a study on space perception in both blind and sighted children. He used twelve congenitally blind children and twelve sighted children matched in age, sex, and IQ. He concluded that the blind lack the ability to use various types of stimuli to the same degree that the sighted do, and that the blind require more training in manipulation of objects and need much encouragement during their initial training.[2]

Winer conducted a study with twenty-two blind adults in 1962. He discovered a positive correlation between their personal adjustment and intelligence by using auditory cues.[3]

Mickunas and Sheridan conducted a study with blind subjects in 1963. This study disclosed that they had developed an obstacle course they had used successfully in evaluating mobility performance in these blind subjects.[1]

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[1] Herbert N. Wright, "Principles of Auditory Training for Travel," Proceedings of the International Congress on Technology and Blindness (June, 1962), pp. 149-56.

[2] William F. Hunter, "An Analysis of Space Perception in Congenitally Blind and in Sighted Individuals" (Study based on a doctoral dissertation, Michigan State University, 1960).

[3] David Winer, "The Relationships among Intelligence, Emotional Stability, and Use of Auditory Cues by the Blind," Research Bulletin, III(December, 1962), 88-93.

Riley, Luterman, and Cohen conducted a study in 1964. They found a significant correlation between the mobility performance and the hearing ability in the blind subjects tested.[2]

These studies seem to show that the better the blind subject's hearing the better his mobility performance may be expected to be. Only one study used the ability to distinguish auditory cues as an indication of higher intelligence and better personal adjustment.

Psychological Aspects Relating to Mobility in Blind Individuals

According to Lowenfeld, psychological problems in the blind person may be caused by any of the following variables or the interaction among and between these variables:

1. Cognitive or objective variables in the blind.
    a) Limitation in the range and the variety of experiences.
    b) Limitation in the ability to get around.
    c) Limitation in the control of his environment in relation to himself.

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[1] J. Mickunas and F. Sheridan, "Use of an Obstacle Course in Evaluating Mobility of the Blind," Research Bulletin, III (August, 1963), 35-54.

[2] Riley, Luterman, and Cohen, op. cit., pp. 139-41.

2. Subjective variables.
   - a) The amount of residual vision the person has.
   - b) The age of the onset of the blindness.
   - c) The cause of the blindness.
   - d) The nature of the blindness.
   - e) The present eye condition.
3. Social variables.
   - a) The attitudes of others toward the stereotypes and misconceptions of blindness.
   - b) The blind person's reaction toward society.

The interaction of these three groups of variables may or may not cause psychological problems.[1]

An article by Gockman about the orientation and mobility of blind persons at the Catholic Charities of the Archdiocese of Chicago, which was started in August, 1962, states that this program includes junior and senior high school students. This program followed very closely the mobility program for impaired veterans at the Veterans Hospital in Hines, Illinois.[2]

The success of this orientation and mobility program depended almost entirely upon parental attitudes. Children reflected the doubts and fears of parents who were over-protective. In the thinking of the parents, the child is incapable of becoming independent because he is blind.[1]

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[1] Berthold Lowenfeld, "Psychological Problems of Children with Impaired Vision," Psychology of Exceptional Children and Youth, ed. William M. Cruickshank (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963), pp. 226-310.

[2] Robert Gockman, "The Importance of Parental Influences upon a Program of Orientation and Mobility for Children," Long Cane News, I, No. 4 (1966), 6-8.

According to Gockman the conditions as they exist are as follows:

Attitudes.--It is necessary before beginning training to learn the attitude of the parents. In many cases the attitudes of the parents are negative. A child may be plagued all of his life by living in an atmosphere with an attitude that blindness is a handicap or affliction that will always mean a life of total dependency.

Aspirations.--The question may arise concerning what parents of a blind child feel he is capable of learning from mobility training.

Observations.--Most often a child will meet the expectations that are established by his parents. If parents of a blind child have a positive attitude and do whatever possible to support him in his training in mobility and orientation, he may be successful and be able to measure up to their expectations.[2]

Opportunities for gaining experiences.--The parents should help the blind child become independent and not be fearful that he may be harmed or injured. A great deal may be gained through playing and entering into activities with the family. It is most imperative that a blind child start at an early age in mobility training, for his entire future depends on it.[1]

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[1] Ibid.

[2] Ibid.

Much can be accomplished through meetings with parents of pre-school blind children at which qualified persons from various departments, such as social service, counseling, and guidance, as well as teachers of mobility and orientation, are present. Parents are most anxious to be in a group of this kind and much benefit can be gained where their problems and interests are the same.[2]

Authorities generally agree in the field of orientation and mobility that success can depend to a very large extent upon parental attitudes. Therefore, a training and counseling program is necessary for the parents of blind children. In some communities the local agencies will assist in a program to acquaint parents with the program to prevent any development of negative attitudes. This would, of course, be a wise procedure to follow. As the needs of blind children are becoming more evident, educational institutions are adding services to their already existing programs or are creating new programs in an attempt to meet the total needs of blind children in modern society.[3]

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[1] Ibid. [2] Ibid. [3] Ibid.

In "Restoration of Skills That Are Basic to Mobility," Carroll says the loss of mobility is the greatest of all the factors which go to make up the life of the blind. The restoration of mobility must be gained as much as possible so that the blind persons can lead a normal life. This is the objective in the rehabilitation programs.[1]

In 1929, The Seeing Eye, Incorporated, was the first hope of encouragement to improve mobility for the blind by using the dog guide. The United States Veterans Bureau later developed the cane technique known as the Hoover cane technique. According to Carroll, the cane technique was developed by the Veterans Administration for the rehabilitation of veterans who were blinded. This technique has been very helpful in theory and practice in aiding mobility therapy.[2]

Professional training is most necessary for a mobility therapist in Carroll's opinion. The mobility therapist field has been growing so fast that it is possible to find untrained persons who volunteer to help blind persons to get around. This could be serious as a therapist is responsible for the life and safety of any blind person he may be helping, so it stands to reason that the therapist should surely have training.[3]

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[1] Carroll, op. cit., pp. 134-43.

[2] Ibid.

[3] Ibid.

Carroll believes that soon all trained and competent therapists must have a license in order to practice. It is wise for families to be aware and to be sure that a mobility course is under a well-trained therapist.[1]

Western Michigan State University, Boston College, and San Francisco State College are graduate schools offering courses with degrees in peripatology or degrees that designate the individuals as mobility specialists. The Rehabilitation Services Administration is supporting this effort at the college level.[2]

Restoring lost mobility has many problems attached to it. The blind must understand his destination and in what direction it is that he wishes to go, and that it is possible. He has to understand the obstacles along the way. In mobility training, the blind person learns to use his remaining senses and with the mode of mobility he extends the ability of the remaining senses. Newly blinded persons are likely to have neurotic fears and panics. These problems may be overcome in the mobility training. The person gets support and realistic hope and soon he discovers that he is regaining his mobility.

Carroll makes the following value judgment: The orthopedic cane and the human guide are dependent means of travel. The dog guide and the cane with, of course, proper technique, are independent methods of travel.[3]

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[1] *Ibid.* [2] *Ibid.* [3] *Ibid.*

The human guide also needs training while the blind person is learning to use this means of independent mobility. It is considered a better arrangement, if possible, to have a paid human guide rather than the spouse or members of the family. A paid guide would eliminate disrupting the normal family schedule. If a member of the family is used as a human guide, the blind person may feel a sense of guilt; with a paid guide he would have a sense of independence.

According to Sommers, five rather distinct kinds of parental attitudes can be identified. They are: (1) accepting the child and the handicap, (2) denial that the handicap makes any difference in the child's performance, (3) overprotectiveness, (4) disguised rejection, and (5) open rejection. These five categories cannot be strictly separated, but they do, in fact, overlap and vary both in degree as well as intensity.[1]

An interesting comparison can be made between the five kinds of parental attitudes found by Sommers and the types of parental attitudes which Kenner distinguishes as being in operation for all children in general; these (listed in the order of those of Sommers above) are: (1) acceptance, (2) perfectionism, (3) overprotection,

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[1] Vita Stein Sommers, The Influence of Parental Attitudes and Social Environment on the Personality Development of the Adolescent Blind (New York: American Foundation for theBlind, 1944), pp. 49-63.

(4) rejection, and (5) overt hostility.[1]

According to the study by Finestone, Lukoff, and Whiteman, who completed a very extensive research dealing with the area of demand for dog guides, those persons who used human guides were minimal in their travel performance, those using the cane technique reached a midway level and were well above those who were human guide users, and those who were dog guide users were markedly superior to those in both of the other groups.[2]

Most writers in the field feel that acceptance of the blind child by the parents is a vital factor in the blind child's adjustment. Most writers in the field also feel that a loss of mobility is a severe blow to the life and activities of the blind person. Family interest in and approval of mobility training with an appropriate mobility device is of vital importance in the adequate adjustment of the blind person.

The use of the cane or dog guide is the independent mode of mobility. The use of the human guide is the dependent mode of mobility.

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[1] *Ibid.*

[2] Samuel Finestone, Irving F. Lukoff, and Martin Whiteman, *The Demand for Dog Guides and the Travel Adjustment of Blind Persons* (Columbia University: Research Center, New York School of Social Work, 1960). The Seeing Eye, Inc., of Morristown, New Jersey, contributed funds for this research project.

Personality

Personality includes the psychological and physical aspects of the organization of the person as modified by the experiences which he meets in life and, therefore, personality includes the environmental, as well as the hereditary, agents. The congenitally blind child experiences the world about him in a way of his own that is different from the way in which his sighted peers experience the world about them. The blind child must contend too with the unique problem of getting around. The child's personality is influenced by these instances. One can assume that because of his handicap he is probably under a greater strain and may, therefore, maintain feelings of frustration, as well as those of insecurity which surpass those experienced by most of his sighted peers.

According to Buell, overprotective attitudes on the part of parents are very detrimental to visually handicapped children. He concluded that "as far as motor performance is concerned, parental neglect is to be preferred to overprotection."[1] He further stated that one could not emphasize too strongly the harm that couldbe done to blind children by the overprotective type of parental attitude.[2]

Blank discusses the possibility of unconscious conflicts concerning blindness which may confront professionals who are working in fields to help the blind. Blank feels that psychoanalytic consultation should be made available to all personnel working with blind individuals and in services to the blind; however, he warns against leaning on psychoanalysis as a universal panacea.[1]

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[1] Charles Edwin Buell, Motor Performance of Visually Handicapped Children (Ann Arbor, Michigan: Edwards Brothers, 1950).

[2] Ibid.

Murphy conducted a study to determine the attitudes of educators and special educators toward the visually handicapped. The teaching of visually handicapped children was placed by the special educators in a more approving position than the teaching of children with other types of handicaps.

In regard to teaching handicapped children, Murphy concluded that knowledge about a handicapped group tends to cause the educator to place those particular handicapped children in a more approving position.[2]

Rusalem suggests that Murphy's study should be accepted with caution because other more subtle factors than the handicap may be operating to cause educators to make the decisions they did. He suggests, for example, that educators may have the notion that braille is difficult; therefore, they prefer not to teach visually handicapped children because they themselves would not want to be confronted with learning braille.[1]

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[1] H. Robert Blank, "Countertransference Problems in Professional Workers," New Outlook for the Blind, LII (May, 1958), 185-88.

[2] Albert T. Murphy, "Attitudes of Educators toward the Visually Handicapped," The Sight-Saving Review, XXX (Fall, 1960), 157-61.

According to Cutsforth, who himself was blind, "Blindness changes and utterly reorganizes the entire mental life of the individual."[2] The frustration or support of this reorganization is what decides the effect the blindness has on the developmental growth of the personality.[3]

Jervis and Haslerud conducted a study using twenty blind adolescents and twenty sighted adolescents who were blindfolded. They attempted to reach some conclusions concerning frustration comparisons of the two groups. They concluded that the "large amount of overt emotional expression in the blind does not reduce tension."[4] They therefore recommended "the desirability of promoting more direct outlets for tensions would seem indicated in the education of the blind."[5]

Brieland conducted a study in which he used eighty-four matched pairs of sighted and blind adolescents. He concluded that the blind subjects were inferior significantly to the sighted subjects in health, emotional and social adjustment, but the home adjustment showed no significant difference.[1]

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[1] Herbert Rusalem, "Research in Review," The New Outlook for the Blind, LVI (1962), 66-68.

[2] Thomas D. Cutsforth, The Blind in School and Society (New York: American Foundation for the Blind, 1951), p. 2.

[3] Ibid.

[4] Frederick M. Jervis and George M. Haslerud, "Quantitative and Qualitative Differences in Frustration between Blind and Sighted Adolescents," Journal of Psychology, XXIX (1950), 67-76.

[5] Ibid., p. 75.

Barker reviewed fifteen studies that had used different personality inventories. He found that six of these studies showed the blind to be more poorly adjusted than seeing groups, ~~—~~that nine of the studies showed no significant difference between the sighted and blind groups. He concludes in agreement with Sommers by questioning the validity of personality tests in research studies with the blind.[2] Most of the personality inventories were standardized on a sighted population, and the blind differ a great deal from the standardizing population. Many items in such personality tests may be interpreted very differently by the blind individual.

Cowen, et al., conducted a three-year research program with 167 adolescents who were visually impaired. The outstanding result of his study was that no consistent nor systematic variations in personality or adjustment characteristics were uncovered among any of the three major groups that were used in the study.[1] This study concludes that the findings "cast an important shadow of doubt on beliefs about inherent associations between visual disability and maladjustment."[2] This study also made an initial attempt at constructing a formula of prediction for adjustment. Along these lines the study found that the adolescent who feels that he is receiving a high degree of acceptance from his parents, who is perceived by his mother to be a well-adjusted adolescent and like other adolescents, and who also is from a fairly high socio-economic group, has a very high degree of likelihood of being a well-adjusted adolescent.[3]

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[1] Donald M. Brieland, "A Comparative Study of the Speech of the Blind and Sighted Children," Speech Monographs, XVII, No. 1 (1950), 99-103.

[2] Roger G. Barker, Adjustment to Physical Handicap and Illness: A Survey of the Social Psychology of Physique and Disability (rev. ed.; New York: Social Science Research Council, 1953).

Jervis conducted a study with twenty blind adolescents and twenty sighted adolescents. The fact that the blind adolescents tended ". . . to an extreme negative or an extreme positive attitude toward themselves would indicate that they have difficulty in normal adjustment."[4]

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[1] Emory L. Cowen, et al., Adjustment to Visual Disability in Adolescence (New York: American Foundation for the Blind, 1961), pp. 253-59.

[2] Cowen, et al., "Factors Relating to Adjustment to Visual Disability in Adolescence," The New Outlook for the Blind, LV (1961), 257.

[3] Ibid.

[4] Frederick M. Jervis, A Comparison of Self-Concepts of Blind and Sighted Children, Guidance Programs for Blind Children, ed. Carl J. Davis (Watertown, Massachusetts: Perkins Institute for the Blind, 1959).

The Cowen and Jervis studies tend to agree generally that there are no outstanding differences between the sighted and the blind adolescents when taken as a group. However, they agree that it appears the differences that do exist are individual differences.

Blank avers that congenital blindness may not necessarily be the cause of an ego defect; however, traumatic consequences always follow when blindness occurs after the age functions have already developed. He stresses that since personality development is largely dependent upon "mother love," psychotherapy to help the mother and to also help the rest of the family are imperative requirements before aiding the child.[1]

Cholden concurs with Blank in regard to the acceptance of blindness coming in stages.[2] The first stage can be "psychological immobility" followed by a stage of mourning. ". . . The patient must die as a sighted person in order to be reborn as a blind man."[3] After blindness is finally accepted as a reality, the beginning of the adjustment to the situation and the way to rehabilitation opens for the blind person. As he comes to accept mobility training, he can again navigate in his surroundings and command his environment and himself in relation to his environment.

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[1] H. Robert Blank, "Psychoanalysis and Boindness," The Psychoanalytic Quarterly, XXVI (1957), 1-24.

[2] Louis S. Cholden, A Psychiatrist Works with Blindness (New York: American Foundation for the Blind, 1958), pp. 49-57.

[3] Ibid., p. 76.

Writers in the area of personality and the blind generally conclude that, whereas blindness is the impairment of the senses, it affects the total individual in different ways. Many studies have not drawn due distinction between congenital and acquired blindness or between total and partial blindness. Writers generally conclude that further research is needed in the area of personality and the blind.

Orientation and Mobility with Visually Impaired Veterans

Bledsoe reports that in 1942 to 1944 the Surgeon General of the Army sent out a request to all soldiers experienced in working with blindness to enlist their help in setting up a rehabilitation program for blinded veterans. Mr. Hoover was one who answered the call and came to Valley Forge Hospital. Fifty soldiers who had been blinded in the war were sent to Valley Forge. These men were demanding something be done so that they could once again lead active lives. The opthalmologists in charge were just as anxious as the patients to see something done that would enable the men to return to an active life. Mr. Hoover, a practical man, started by teaching the blinded veterans foot travel and orientation to their environment. It was a great lesson in how to overcome a handicap. It soon became noticeable how remarkably they moved about their environment without canes. Hoover noted that the men appeared to be fearful of bumping into something, and so they were holding their heads back in an abnormal way. This accentuated the appearance of blindness a great deal more than using a cane. Hoover blindfolded himself, then did much experimenting. He decided that a cane should be used as both a bumper and a probe. These newly blinded veterans had not had time to form any bad habits as blind individuals. Thus, Hoover, was able to try many techniques on this group of blind persons. The method Hoover offered was simple and has proved itself. This method has proved to be satisfactory for blind persons since this time; the cane technique has been modified very little since its conception by Hoover.[1]

Often a newly blinded person, after he has had mobility training in the cane technique, will regress to the use of the cane as a sighted person does, either as a support or a walking stick. The reason for this behavior is due to the blind person not wanting to be seen or noticed as being blind. This is why a simple demonstration is not sufficient, but a long training period and a very thorough course in handling the cane are required.[2]

According to Bledsoe, blind children going without canes in a familiar and controlled environment may be acceptable, and they may be able to do so quite efficiently, but everyone should be concerned over the danger to these children when they drift into an uncontrolled and hazardous environment.[3]

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[1] C. Warren Bledsoe, "Resistance," The New Outlook for the Blind, XLVI (November, 1952), 245-50.

[2] Ibid.

[3] Ibid.

According to Williams, due to the many war blinded veterans, it has been found that special therapeutic processes and rehabilitation techniques, besides medicines and opthalmologic care, are necessary to place these men back into the active streams of life. These patients are given special therapeutic treatment and a reorientation to their environment. In a rather rigid discipline the physical realities of blindness are brought home to these patients. With therapy before starting treatment, an estimate can determine the patient's chances for success. Precautions can be taken so the individual will not be confronted with situations greater than his capacity to endure. The therapy processes are not entirely vocational training but a transition process physically and emotionally. This process of training is to try to prepare the patient for a new launching into society with circumstances altered by his blindness, but with circumstances with which he has been trained carefully to cope.[1]

Writers in the care of rehabilitation for blinded veterans generally agree that mobility is of major importance in achieving the rehabilitation. Mobility training aids the blinded veterans in their re-entry into an active, productive life. Adequate mobility training places the blinded veteran more nearly in control of his environment and enables him to become independent.

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[1] Russell C. Williams and Maxwell Flank, "Therapy for the Newly Blinded, As Practiced with Veterans," Journal of the American Medical Association, CLVIII, No. 10 (July 9, 1955), 811-18.

Orientation and Mobility Training with Visually Impaired Children

It is a recognized fact, say Gockman and Costello, that any program for blind children should emphasize training in orientation and mobility, or it is not a complete program. The instruction in this area must be fitted within the curriculum that is designed to meet the total needs of every blind child within the program. By means of the work accomplished by Hoover, who developed the efficient cane technique, and the work by Williams, who helped to direct a program which has been accepted for the rehabilitation of our blinded veterans, the way has been paved for an efficient program for the training in mobility and orientation of other blind individuals. This work can be applied to the orientation and mobility training of children also.[1]

Whitstock believes that it is necessary in the teaching of orientation and mobility to children that the training be adapted to their individual interests, capabilities, needs, and environment. Mobility and orientation extend to the depth of human personality. Home and school need to assist in the total efforts to obtain the best results; therefore, a team approach is suggested. The blind child should have encouragement to develop many skills which will help him to broaden his physical and social competencies. The ideal environment for the child should be one in which he will have a desire to react as a whole human being; then he will develop the use of his potentialities to the maximum of his ability. Counseling is needed in order that the teachers and parents may be guided to understand themselves in their attitudes toward the blind child.[1]

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[1] Robert Gockman and H. Joan Costello, Mobility Training for Junior and Senior High School Students, A Project Summary Delivered at the American Association of Instructors of the Blind Convention, Salt Lake City, Utah, June, 1966.

A child's behavior reflects to a large degree the influence of those around him. According to Whitstock, over-protection or even affection may smother or distort his development to such an extent that he may never entirely overcome the effects of it. A blind child should have home and school responsibilities as he becomes capable of assuming them. The blind child should not be protected from all bruises and falls; these are part of the normal growing up processes and these experiences teach confidence and self-reliance. Parents and teachers must strive to instill in the child confidence and self-respect. Bad posture, and rocking back and forth are quite common, but should be discouraged, as they set the blind child apart from other children. The blind child should be given the opportunity to make frequent contact with sighted friends and adults. Orienting the blind child to the location of his seat in the school room, as well as to the total environment of the school, is part of his basic training and should not be neglected. The blind child should be made independent in that he should be able to find his way after proper orientation around his school environment. The blind child, as a part of his orientation should be made aware tactually of different objects in his environment. As part of his school experience he can become aware of new objects in his environment, such as a truck, for example, by tactual exploration.[1]

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[1] Robert H. Whitstock, "Orientation and Mobility for Blind Children," The New Outlook for the Blind (March, 1960), 90-94.

According to Whitstock, there are many non-visual cues to help the child in location and use of landmarks. The odor of a bakery gives the blind person a clue as to what business he is passing. The noise of a train or the sound of a car may be a valuable clue as to location or to objects in the environment.[2]

According to Whitstock, orientation and mobility should be started early in the development of a blind child. In this way, when the child reaches adulthood, orientation and mobility can have the greatest effectiveness in his social and economic life.[3]

Blindness, according to Miller, is not the only defect of blind children. Blind children have such physical defects as poor posture; they walk with a gait and swinging of arms which seem to be a manifestation of tension or uncertainty. These abnormalities are due to stress and strain.[1]

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[1] Ibid.   [2] Ibid.   [3] Ibid.

In training, Miller believes, the child has to be given enough confidence to know the ground will be there when he steps forward. When this assurance and confidence are obtained, the many abnormalities will gradually disappear. With mobility training and the proper use of the cane coupled with the proper philosophy, the difficulties of maneuvering correctly in the environment can be solved successfully. The use of the cane is a guide giving the necessary information for safe walking. With the cane the child becomes aware of many obstacles; he can check the exact place he is about to walk. Testing by the feet could not give the blind child the total amount of information before the steps were taken. The cane provides clues, encouragement, and interest in his mobility. Training of the blind child with the cane technique provides him with a safe means of mobility. After learning this technique, the child continues to rely on his own skills, and he has the ability to be independent and develop into a well-rounded, mature individual. As time goes on there is nothing to prevent him from having many of the same experiences as the sighted child.[2]

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[1] Josephine Miller, "Mobility Training for Blind Children; Possible Effects of an Organized Mobility Program on the Growth and Development of a Blind Child," The New Outlook for the Blind, XLVIII (December, 1964), 305-307.

It is necessary, according to Manley, for the student to know his surroundings and be able to be aware of his destination. The child should have gained a great deal of independence and should have received encouragement to become familiar with all the landmarks in the environment in which he wishes to travel.[1]

For the students who are poor travelers, Manley says, the classroom is a logical place for them to become familiar with an environment. They can become familiar with the design of the room, and the sound of the clock could be a landmark for a direction. With a little encouragement, the blind child will soon learn to locate the teacher's desk and his own seat. The locations of these things should not be changed and after repeated journeys about the room, his memory of new locations in the surroundings will be a guide for him. If any changes are made, the student must be allowed to freely move around and explore for himself the changes which have been made.[2]

Walker reports that an organized program in mobility and orientation for the visually handicapped child is often neglected. It has been agreed by educators in this field to be a very urgent need and should be organized on a national scale.[3]

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[1] Jesse Manley, "Orientation and Foot Travel for the Blind Child," International Journal for the Education of the Blind, XII (October 16, 1962), 8-13.

[2] Ibid.

[3] Don L. Walker, "Practices in Teaching Orientation, Mobility, and Travel," International Journal for the Education of the Blind, XI (December, 1961), 56-58.

More time should be allotted to mobility and orientation. A survey which was conducted found that less than two hours per week were spent by each child on this important need for the complete education of the child.[1]

According to Walker, in order to have a well-organized program in orientation and mobility and travel skills, and in order to have the best results, a well qualified teacher is required. Many schools have only part-time programs. Classroom teachers, teachers in physical education, and even others, are attempting to teach these necessary skills. The well qualified teacher should also be a normally sighted person.[2]

Apparently the long cane for travel is considered to be the best standard tool for mobility; however, a few schools favor a short type of cane. Since there has been a diversified training program in many schools, experiences that can be helpful in setting up a standard program have been given. It is hoped that tentative standards will be set up as a guide for schools in planning their programs for orientation, mobility, and travel training.

The national concern is to establish more permanent standards from results so far obtained and continue to do further research and study on the questions pertaining to orientation, mobility, and travel training. It would seem plausible to aver that some type of standards in this field for the training of visually handicapped children will be forthcoming in the near future.[1]

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[1] Ibid.

[2] Ibid.

The purpose of the Jones study was to measure the mobility of the blind in regard to the relationships between individual factors and good or poor mobility competency. The study was done in two parts. The subjects used were twenty-five totally blind adolescent boys from a residential school. The results of this effort showed there was no correlation between the intelligence and mobility of the subject. The study further showed no correlation between mobility and the causes of blindness, chronological age, onset of blindness, and certain areas of personality. Jones did find a correlation between mobility and attitudes toward blindness, freedom from the withdrawing tendencies, a feeling of belonging, the subject's physical fitness, family relations of the individual, and self-reliance.[2]

This study shows that mobility in the blind adolescent correlates with some significant factors. This study should not be used in drawing basic conclusions for use as the study included only one program, only a residential setting was included, only twenty-five subjects were used, only adolescents were used, and the subject sample included only boys.[1]

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[1] Ibid.

[2] Gideon R. Jones, "Some Factors Affecting Mobility of Blind Adolescent Boys" (unpublished Doctoral dissertation, Wayne State University, 1963).

The writers in the area of mobility training for children generally concur that there is a strong need for such training in this area and that the need for some standards is important. Most writers in this area state that more research is needed in this field so that conclusions for standards can be found.

Viewing Mobility

Program planners for the blind must understand the real effects of blindness and the special needs of the blind, and the many steps required for the adjustment of the blind person. In planning the educational and rehabilitation programs, the workers in this field are very much aware that training is necessary if the blind are to have enough self understanding of their sensory capabilities to make up for the functions which sight would give them. Mobility is one of the most important activities which will be involved in every part of the blind person's life. There are many differing viewpoints in the field as to devices for mobility. Great care must be given to place careful focus on the needs and capacities and the environmental demands of the blind person.

According to Ball, the need of mobility for the blind was recognized a century ago. Perhaps the human guide and the stick or cane were the first aids in mobility for the blind; the dog was used as a companion at first, then it was found that dogs could be trained as guides. After two world wars there were so many blinded veterans that the need for mobility became urgent and crucial.[1]

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[1] *Ibid.*

Ball says children's physical and psychological readiness must be considered in the training of blind children in mobility. There is need for the training of teachers in colleges and universities with special courses in education so that the educators in the future who will be working with blind children will understand the mobility needs of these children.[2]

In 1949, Hines Hospital, a Veterans Administration Hospital, started instructions for persons from various agencies for the blind. As mobility demands increased, standards were set up for mobility and orientation instruction. These standards for mobility training were patterned after the program used by the army. This basic program is used in vocational rehabilitation and also by the American Foundation for the Blind.[3]

Ball states that the first graduate programs for training persons to be teachers of mobility were at Boston College and Western

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[1] Martha J. Ball, "Peripatologist, Mobility in Perspective," Blindness (American Association of Workers for the Blind, Inc., 1964), pp. 107-41.

[2] Ibid.

[3] Ibid.

Michigan University.[1] There was immediate need for 100 trained mobility experts, but later this number was found to be far too conservative. In 1962 grants were established for mobility training for demonstration projects. These projects were to show the value and needs for mobility training for blind clients in the area of the country where the project existed.[2]

Perhaps the future programs in mobility will become so successful and effective that every blind person may better realize a means of mobility. The science of mobility is new and, therefore, is not immune from the problems faced by any new area of training. Writers in the area of mobility training generally agree that more training programs are needed to train experts in this field. They also agree that only trained persons should instruct blind persons in the skills and techniques of mobility.

Orientation and Mobility with Visually Impaired Adults

The ability of the blind to move about freely and be aware of the surroundings in their immediate area is essential for living and for making a livelihood. There are various modes of mobility such as the seeing eye dogs, the cane, and the sighted human guide. Blind people are evaluated in terms of their mobility performance.

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[1] *Ibid.*

[2] *Ibid.*

The use of mobility media should be evaluated according to the use and satisfaction of the individual. An orientation and mobility program prepares the blind person in the following ways:

1. To travel to work and return; the use of conveyances and the use of the telephone.
2. Movements in a work area, changes in buildings, place for tools or materials.
3. Fire drills, confusion, crowded work areas.
4. To conform to the rules and the demands of an organization where he works; to be able to get along with his fellow workers and customers.
5. In daily life when and how he is to ask for locations such as restrooms and cafes.
6. Awareness of where to expect moving objects such as busses and cars.
7. At home, the location and sound of the telephone and the doorbell; to be able to distinguish which is the telephone and which is the doorbell.[1]

The blind individual moving freely about has many things to cope with in the way of hazards. He should be alert to stop quickly or to move in quickly.[2]

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[1] Irving J. Kruger, "Orientation and Mobility in the Vocational Area," The New Outlook for the Blind, LIV (March, 1960), 87-90.

[2] *Ibid.*

The orientation and mobility training enables the blind to be able to make adjustments and to prepare for future stresses and hazards. This program can be adjusted to apply to each individual according to the place he is planning to work and to prepare him to be oriented so he can adequately compete with the sighted persons.

The area of reorientation is often overlooked. If changes in the work program are made, he should be oriented to the new changes.

Programs of orientation and mobility are being carried on in different countries all over the world as a part of rehabilitating the blind into a useful and productive place in society. Every country has its blind population who need to take a useful place in society.

Typical of progressive programs for the blind in countries outside of the United States is the program of rehabilitation being carried on in Israel for its blind population. According to Menzel, there is a very high per cent of blind persons of working age in Israel. This condition is partly due to the immigrant population from underdeveloped countries. In the Anglo-Saxon countries one finds about 15 to 20 per cent. Israel has 60 per cent of their blind population of working age. This condition necessitates a country to have an orientation and mobility program to prepare these handicapped individuals for useful lives.[1]

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[1] Rudolphina Menzel, "Mobility and Orientation in Israel," The New Outlook for the Blind, LVIII (May, 1966), 157-58.

When an individual loses his sight, his whole life situation changes. Sight is the most important sense a person has. The sense of touch becomes the most important sense when sight is lost, according to Menzel. Although touch is very important to the blind person, it does not extend the distance of sight. With the loss of sight the individual cannot quickly move into new areas and acquaint himself with his surroundings. It becomes difficult to walk in a straight line direction or to go to a certain place directly or by the shortest path. The blind person has to find his way by sound or by noise or by his sense of touch.[1]

With the loss of his sight there is a loss of mobility and orientation which is a very serious handicap for the blind person. This individual immediately feels physically, socially, and economically dependent. These types of feelings can bring on untold amounts of frustration and can even produce manifestations of other physical problems.[2]

It is difficult for the blind individual to occupy his time for he is dependent on a sighted guide to take him out socially. The blind person often resents his lack of privacy. Gradually a blind person's visual memory fades; he loses interest in asking about his environment. Unless his sighted human guide keeps him informed and describes things around him which help to keep his interest, he removes himself more and more from the world and his surroundings. This should not be allowed to happen as this is not what the desire or intention of society is. The hope is to keep the blind person eager to remain in the same groups with his sighted peers.[1]

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[1] Ibid.

[2] Ibid.

To take their place with sighted persons the blind must be trained in orientation and mobility, and the use of the cane or the dog guide is accepted as necessary. The use of the human guide is also another means of mobility for the blind individual, but it is not as independent a method for getting around as the other two methods. The blind person usually has a preference from which he can get the greatest feeling of efficient mobility. Often a blind person needs help in selecting the mobility device which will be the best for him and which will fulfill his needs. The dog guide takes the person about much faster and more safely than is possible with a cane, avoiding hazards, finding entrances and exits to houses, buildings, or conveyances, and reaching desired destinations.[2]

Some blind people cannot have a dog guide because they may not like a dog for a companion, or perhaps the blind person may live where his needs are not complicated enough to have a dog. To a great many blind persons, the use of a cane would be very adequate.[3]

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[1] *Ibid.*

[2] *Ibid.*

[3] *Ibid.*

In the field of orientation and mobility, the sincere desire of the workers is to help the greatest possible number of blind individuals attain such a fine degree of mobility that they can take their places in competitive industry with their sighted peers. Then no longer will the blind population be required to work in such occupations that have been labeled as work for the blind.

Because of the great importance which mobility has to blind people, a recent survey was conducted to see if the potential blind population in the United States would be requiring more dog guide facilities in the near future. According to Finestone, Lukoff, and Whiteman, it has been found that the estimated demand for dog guide service and the potential need for dog guides in the immediate future would be such that there would be no immediate need for plant expansion or more training centers. At the present there are eleven training centers in the United States. Most candidates are between the ages of fifteen to fifty-four, so this survey showed.[1]

There are some blind persons who are not capable of using dog guides and a very careful study should be made of the client and his environment and needs before a dog guide is chosen by a client. It is highly possible that many blind persons may eventually be capable of using a dog guide. These blind persons should be helped to overcome their objections to using a dog guide. Most dog guide schools eliminate clients who have enough vision to be able to get around without aid, those too old or physically not able to get around. Finestone, Lukoff, and Whiteman point out that those blind individuals with emotional disturbances, poor health, low intelligence, dog phobia, no place to keep or exercise the dog, and family objections are also not eligible for a dog guide. In order to fulfill the desired need of the blind, problems often can be taken care of so the blind individual can get a dog guide.[1]

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[1] Finestone, Lukoff, and Whiteman, op. cit.

It is an accepted fact that there is a need for the blind person to be able to move about in order to facilitate his adjustment. It affects him in his work as a student or in getting to and from his work or as a member of any group. His relationship is affected by those with whom he comes in contact, as well as his own satisfaction with himself.[2]

Many blind persons lack confidence in travel but do not make too much effort toward improving themselves. They seem to feel their limitations because they are not more highly mobile. They are limited in mobility because of their handicap, and they tend to accept this limitation. Sometimes the limitations which the blind person feels are due to over-protection of the family or the community. Also, there are shortages in most communities of rehabilitation services; this creates a sense of apathy.[3]

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[1] Ibid.

[2] Ibid.

[3] Ibid.

Some blind persons hesitate to use a dog guide because of misinformation which they have received. There is a considerable amount of wrong information about a dog guide such as control or proper care of a dog, expense of feeding a dog, and the notion that a dog guide causes too much attention.[1]

According to Finestone, Lukoff, and Whiteman, there is a definite need for more and better social services for individual blind persons; also more psychological services are needed by these people. There should be closer coordination of all agencies in the field in regard to the blind population.[2]

According to Curtis, mobility may be described as moving about freely from place to place. Mobility is not only physical movement, it is also psychological movement which involves feelings, opinions, desires, and aims.[3]

Society has great concern for these handicapped persons, and our present day society is doing much to be of assistance to help these handicapped persons become oriented to their surroundings. Mobility is no doubt the greatest need of the blind, according to Curtis.[4]

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[1] Ibid.

[2] Ibid.

[3] George T. Curtis, "Mobility: Social and Psychological Implications," The New Outlook for the Blind, LVI (January, 1962), 14-18.

[4] Ibid.

The blind are aware of many limitations of which the sighted person is hardly conscious, such as security, personal independence, job opportunity, loss of career, loss of visual perception of the beauty around him, and many more.[1]

According to Curtis, the loss of independence often causes a blind person to become too independent because he feels he is justified due to his handicap. He may become depressed. However, society expects the blind to be rehabilitated and oriented in order to return to employment and take his place among his sighted peers. In some cases the attitudes of members of his family, as well as those of his friends make a difference to the blind person in matters involving his mobility and thus his adjustment. Not always are the attitudes of those close to the blind person of a positive nature, and these attitudes can be harmful. In an environment of hostile reactions, negative attitudes work against the rehabilitation of the client. Sometimes families may relate to friends that this handicapped person is the only member of their family who is handicapped. This type of statement on the part of a member of his family gives the blind person the feeling of not being one of the family.[2]

Curtis states that the rehabilitation and vocational period prepares the blind person for appropriate employment to which he is adapted. Learning orientation and mobility skills are part of the individual's rehabilitation into a respected position in the community. Orientation and mobility skills make it possible for the blind person to take the skills which he has to a position of employment. It is necessary that the client take positive action for his adjustment and rehabilitation.

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[1] Ibid.

[2] Ibid.

The goal of society and all of its agencies is to train and rehabilitate the blind and to place them in employment where they are most capable and qualified. This type of approach will help to preserve the blind individual's self esteem and personal dignity.

There is agreement among authorities in the field of rehabilitation of the blind that these individuals should be given orientation and mobility training so they can return to useful employment and a purposeful place in society. They further agree that orientation and mobility training are essential to a healthy personal, social, and economic adjustment for blind persons. The more capable the handicapped person is in mobility, the less blind he will seem to those around him.

CHAPTER III

METHODS AND PROCEDURES

In this chapter the setting for the study is described as well as the subjects involved. A brief delineation of the instrments, together with the investigative methods and procedures for gathering the data, and the statistical procedures used in processing the data are given.

Subjects Used in This Study

In this study all subjects used qualified under the medical definition for legally blind. According to the medical definition for blindness, a person is blind if he has central visual acuity of 20/200 or less in the better eye, with corrective glasses; or central visual acuity of more than 20/200 if there is a field defect in which the peripheral field has contracted to such an extent that the widest diameter of visual field subtends an angular distance no greater than twenty degrees.

The subjects in this study used one of three modes of travel: (1) cane, (2) dog guide, or (3) human guide. The population in this study was divided into two groups on the basis of mode of mobility. Group I included fifteen subjects who used either cane or dog guide as their mode of mobility. Group II included ten subjects who used a human guide as their mode of mobility. Each of the individuals in this study was living in the metropolitan area of Denver, Colorado. The subjects were placed in an arbitrarily delineated dichotomy. Group I contained subjects who were either cane users or dog guide users. Group II contained subjects who were human guide users. Fifteen subjects were clients of the Department of Rehabilitation, Division of Services for the Blind, Denver, Colorado, and met the criteria for Group I. Ten subjects who were also clients of this same Department of Rehabilitation met the criterion for Group II.[1]

The investigator worked with the Department of Rehabilitation, Division of Services for the Blind (Denver), in securing the subjects for this study. The agency aided the investigator in securing the subjects' permission and cooperation in the study (see Appendix A).

Instruments Used in the Study

The Verbal Scale of the Wechsler Adult Intelligence Scale (WAIS) test of mental ability is used by the Department of Rehabilitation, Division of Services for the Blind (Denver) to establish an IQ score for blind subjects. The Verbal scale of the WAIS was used. Bauman and Hayes give directions for the use of the WAIS scales in their manual on testing of the blind.[1] In this study IQ scores were sought from the case files of the individual subjects in the study. Help was secured from a certified psychologist in obtaining the IQ scores.

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[1] See Table 1, Appendix B, for population description.

Carroll says that blind persons who use the dog guide or a cane with the proper technique are independent in matters of mobility. Those who use the human guide are dependent.[2]

The Finestone, Lukoff, and Whiteman study showed that blind persons who used a dog guide or the cane and its proper technique were more highly rated in mobility than those who used the human guide as a means of mobility.[3] These two judgments were used to determine the mobility independence of the subjects used in this study, in order to place them in one of two groups: (1) those with a high degree of mobility independence, (2) those with a low degree of mobility independence. On the basis of the Finestone, Lukoff, and Whiteman study, those who used the dog guide or the cane with its proper technique were placed in the group rated as (1) those with a high degree of mobility independence. Those who used the human guide as a mobility device were placed in the group rated as (2) those with a low degree of mobility independence. In the present study it was also desired to discover whether a relationship existed between mode of mobility and higher degree of independence. It was desired to discover whether cane or dog guide users had a higher degree of independence than those using a human guide as a mode of mobility.

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[1] Mary K. Bauman and Samuel P. Hayes, A Manual for the Psychological Examination of the Adult Blind (New York: The Psychological Corporation, 1951), pp. 27-28.

[2] Carroll, op. cit., pp. 134-43.

[3] Finestone, Lukoff, and Whiteman, op. cit., p. 119.

The subjects in this study were interviewed by Miss Judi Russell, an Education Specialist in Vocational Rehabilitation. She was trained in counseling with disabilities and was experienced as an interviewer. The interviews were used to determine the perceived family attitudes existent in the home backgrounds of the subjects involved in this study. Determination was made regarding the subjects' perception as to above average or below average family attitudes towards mobility and mobility training. These attitudes were designated as supportive or non-supportive toward his mobility training and independent travel.[1] The professional interviewer also rated the subjects as to their independence or dependency tendencies. This rating was made during the interview and based on the interviewer's training and judgment.[2]

Visual acuity was obtained from the medical records of each subject in the study. Visual acuity of 2/200 down to total blindness was considered as not useful travel vision. Visual acuity of 3/200 up to 20/200 was considered as useful travel vision.

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[1] See Table 2, Appendix B.

[2] See Table 3, Appendix B.

The Emotional Factors Inventory by Bauman was used to further assess the present personality factors involved in each subject in the study. Bauman's personality inventory ". . . is the only personality questionnaire which has been designed specifically for blind adults."[1]

The items in this personality inventory are based partly on an analysis which was made of statements from workers in rehabilitation about the difficulties and personality aspects which they found in their clients. The informational areas in this personality questionnaire were selected with particular reference to their use in the rehabilitation climate.[2]

The researcher of this present study had written permission from Mary K. Bauman to use her personality questionnaire. Scoring of the responses and placing the norms on each test was done by the Personnel Research Center. A description of the factors on the Bauman scale is as follows:

1. Sensitivity--This type of item is common to personality inventories, otherwise known as emotional instability or neurotic tendencies.

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[1] Bauman and Hayes, *op. cit.*, p. 37.

[2] *Ibid.*

2. Somatic symptoms--Under this heading are found simple health items which may be possibly regarded as psychic in their origin. These could include such things as fatigue with no apparent cause, allergies, headaches, or pounding heart.
3. Social competency--This could include such things as the attitude of the person in a social situation, his willingness to seek social contact rather than withdrawal from groups.
4. Paranoid--This group of items tries to discover feelings of suspicion and mistrust of others, a self-magnification attitude or the idea that the person has been treated unfairly or persecuted.
5. Inadequacy--These items seek to discover inferiority feelings, inability to cope with competition. These feelings are supposed to be present in persons with a physical defect.
6. Depression--These include hopelessness, lack of morale; these feelings are supposed to be present in persons with a physical defect.
7. Blindness--These items try to measure the person's feeling concerning blindness, himself as a blind individual, how he feels his family and the community ought to behave toward him as a blind individual.

8. Validation--Attempts to measure the truthfulness, frankness, and understanding which the person had in taking the inventory.[1]

Determination was sought from medical records concerning the blind persons' physical fitness. Subjects were designated as above or below average in physical fitness.

Statistical Procedures

The first hypothesis involved the IQ score or intelligence score and mode of mobility. This is dichotomous. The significance was tested with the point biserial coefficient.[2]

The second hypothesis involved modes of mobility and dependent or independent tendency. This is dichotomous. The significance was tested with the phi coefficient.

The third hypothesis involved additional physical disabilities and mode of mobility. This is dichotomous. The significance was tested with the phi coefficient.

The fourth hypothesis involved family attitudes (above or below average) and mode of mobility. This is dichotomous and was tested for significance with the phi coefficient.

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[1] Mary K. Bauman, "A Comparative Study of Personality Factors in Blind, Other Handicapped, and Non-Handicapped Individuals" (Philadelphia, Pennsylvania: Personnel Research Center, 1960).

[2] James E. Wert, Charles C. Neidt, and J. Stanley Ahmann, Statistical Methods in Educational and Psychological Research (New York: Appleton-Century-Crofts, Inc., 1954), pp. 314-15.

The fifth hypothesis involved personal adjustment (an inventory scale) and mode of mobility. The inventory scale ranged from zero to fifteen and included eight parts. This is dichotomous and was tested for significance with the point biserial coefficient.

The sixth hypothesis involved visual acuity (2/200 and below) and mode of mobility. This was dichotomous and was tested for significance with the phi coefficient.

Point biserial is a correlation coefficient for use with a continuous and a dichotomous variable. Phi coefficient is a similar device used with two dichotomous variables.

Formula for point biserial r:

$$r_{pbi} = \frac{\bar{X}_p - \bar{X}_q}{S^t} \sqrt{pq}$$

Formula for phi coefficient:

$$\phi = \frac{BC - AD}{\sqrt{(A+B)(C+D)(A+C)(B+D)}}$$

The reference for statistical information was Statistical Methods in Educational and Psychological Research.[1]

Mode of mobility was dichotomized; Group I--cane or dog guide users, Group II--human guide users. The phi coefficient correlation and point biserial correlation coefficient were used to determine relationship between two variables. The statistical significance of the relationship was tested by referring to a table of significant values of the Pearson product moment correlation coefficient.

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[1] Ibid.

CHAPTER IV

TREATMENT AND DISCUSSION OF DATA

This study was limited to blind persons in the Denver (Colorado) area. A total number of twenty-five subjects was used. All subjects used in the research qualified under the medical definition for blindness.[1] The subjects in the study used one of three modes of travel: (1) cane, (2) dog guide, or (3) human guide. The subjects were placed in an arbitrarily delineated dichotomy on the basis of mode of mobility. Group I contained fifteen subjects who were either cane users or dog guide users. Group II contained ten subjects who were human guide users. All subjects used in the study were clients of the Department of Rehabilitation, Division of Services for the Blind, Denver, Colorado. The investigator worked with the staff at the Department in securing data for the study. Written permission for participation in the study was received from each subject.[2]

The researcher administered the Bauman Emotional Factors Inventory to the subjects.[3] The scoring of the results of the inventory and the placing of the individual norms on each inventory was done by the Personnel Research Center, 1604 Spruce, Philadelphia, Pennsylvania.

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[1] See page 63, medical definition for blindness.

[2] See Appendix A, letter of permission.

[3] See page 67, Emotional Factors Inventory.

The interviewer asked the subjects to rate their families' attitudes toward mobility efforts.[1] The subjects were also rated for independence or dependency tendencies as perceived by the professional interviewer.[2] Scores obtained from the Department of Rehabilitation, Division of Services for the Blind, Denver, Colorado, for all subjects in the study were as follows: IQ,[3] additional physical disabilities,[4] and visual acuity.[5]

Analysis of Data

The phi coefficient and the point biserial correlation coefficient were used in this study as the data were continuous and dichotomous. The phi coefficient is a device used with two dichotomous variables. The point biserial is a correlation coefficient for use with a continuous and a dichotomous variable.

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[1] See Appendix B, Table 2.

[2] See Appendix B, Table 3.

[3] See pages 64 and 65, IQ scores.

[4] See page 69, additional physical disabilities.

[5] See pages 66 and 67, visual acuity.

The reference used for statistical information was Statistical Methods in Education and Psychological Research by Wert, Neidt, and Ahmann.[1]

Correlations were run of two subject groups. These groups were as follows: (1) All subjects, involving twenty-five cases, with 23 degrees of freedom, .05 level of significance $r \geq .396$; and (2) less certain subjects on whom family attitudes were an inadequate measure because they had undergone mobility training too long ago, and recollecting family attitudes from a number of years ago may have lead to questionable present feelings which had been altered by a great time lapse. This involved twenty cases. At the .05 level of significance, this was found to be not significant.

Correlations among pairs of variables under investigation were made by the computer to determine which of the variables were statistically significant at the .05 level of significance. Thirteen of the fifteen variables paired with mode of mobility showed a significant correlation. The sixteenth variable, mode of mobility, does not correlate with itself. This leaves fifteen possible correlations with mode of mobility under consideration. Within the limits of the study one of the fifteen variables correlated with mode of mobility was found to have no significance at the .05 level and was not used in reporting the results. This variable was family attitudes.

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[1] Wert, Neidt, and Ahmann, op. cit.

The population in this study was divided into two groups on the basis of modes of mobility. Group I contained subjects using a cane or dog guide as their mode of mobility. Group II contained subjects using a human guide as their mode of mobility.

Significant correlations were found between mode of mobility and the following variables: IQ; independence; additional physical disabilities; Bauman scale--sensitivity; Bauman scale--somatic symptoms; Bauman scale--social competency; Bauman scale--paranoid tendencies; Bauman scale-inadequacy; Bauman scale--depression; Bauman scale--blindness; Bauman scale--validation, vision, and special dimension score (certain items from the Bauman scale which tend to correlate with the dependency factor).[1]

Table 4 is presented to show the variables used in the study.[2] Numbers 5 through 12, inclusive, contain the Bauman scale. Variable number 15 is mode of mobility. An attempt was made to correlate this variable with the remaining fourteen variables. Correlations were made between twelve variables and mode of mobility. The independence variable was correlated with the special dimension variable.

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[1] See Appendix B, Table 5.

[2] See Appendix B, Table 4.

Table 5 is presented to illustrate the experimental design of the study. Numbers 5 through 12 in the column represent the variables in the study. Column 16^a represents the required r at the .05 level of significance where r .396. Column 16^b represents the obtained r at the .05 level of significance for these variables..

Restatement of Null Hypothesis and Data Regarding the Variables under Investigation

Hypothesis 1

There will be no significant relationship between IQ and mode of mobility. This hypothesis involves the IQ and mode of mobility, variables 1 and 15. All subjects were used in testing this hypothesis. When a correlation was run between IQ and mode of mobility, it was found to be significant; therefore, the null hypothesis is rejected.

Table 6 presents a summary of the correlation between IQ and mode of mobility. When these two variables were compared, the relationship was found to be significant: required $r \geq .396$, obtained $r = 0.6303$; number of cases - 25, 23 degrees of freedom. Group I ranged in IQ from 95 to 126. Only four subjects had an IQ below 110. IQ's of the majority of individuals in Group I tended to be above average. Subjects in Group II ranged in IQ from 84 to 117. Nine subjects had an IQ below 110. The Iq's of the individuals in Group II tended to fall within the average range. The mean IQ of Group I was

115.88; the mean IQ of Group II was 99.80.

Hypothesis 2

There will be no significant relationship between different modes of mobility and dependency. This hypothesis involves the dependency rating and modes of mobility, variables 2 and 15. All subjects were used in testing this hypothesis. When a correlation was run between the dependency rating and mobility, it was found to be significant; therefore, the null hypothesis is rejected.

Table 7, Appendix B, presents a summary of the correlation between the dependency rating and mode of mobility. When these two variables were compared, the relationship was found to be significant: required $r \geq .396$, obtained $r = -0.5804$; number of cases - 25, 23 degrees of freedom. Within the limits of this study it was found that those rated as independent had greater independence in mobility. A negative relationship was found between a dependency rating and mode of mobility. On the basis of these data, the null hypothesis is rejected.

Hypothesis 3

There will be no significant relationship between additional physical disabilities and mode of mobility. This hypothesis involves the additional physical disabilities and mode of mobility variables, 3 and 15. All subjects were used in testing this hypothesis. When a correlation was found between additional physical disabilities and mode of mobility, it was found to be significant.

Table 8, Appendix B, presents a summary of the correlation between additional physical disabilities and mode of mobility. When these two variables were compared, the relationship was found to be significant: required r $\geq$ .396, obtained r = -0.5804; number of cases - 25, 23 degrees of freedom. Within the limits of this study, it was found that those who had no other physical problems other than blindness used the cane or dog guide as their mode of mobility. A negative relationship was found between those with health problems and mobility independence. These individuals tended to use the human guide as a mode of mobility. On the basis of these data, the null hypothesis is rejected.

Hypothesis 4

There will be no significant relationship between supportive and non-supportive family attitudes toward the mobility training of the blind individual and mode of mobility. This hypothesis involved the family attitudes and mode of mobility variables, 4 and 15; number of cases used - 20, 18 degrees of freedom. Within the limits of this study, at the .05 level of significance, the researcher was unable to establish a relationship between family attitudes and mode of mobility. On the basis of computed data, no relationship existed between these two variables; therefore, the null hypothesis is retained.

Hypothesis 5

There will be no significant relationship between current psycho-social adjustment, as measured by the Bauman scale, and mode of mobility. Within Hypothesis 5, eight specific problems were explored. Each of the problems will be discussed individually.[1]

Problem 1: This problem involves the Bauman scale, sensitivity, and mode of mobility, variables 5 and 15. All subjects (twenty-five cases) were used in testing this hypothesis, with 23 degrees of freedom. When a correlation was run between sensitivity and mode of mobility, it was found to be significant.

Table 9, Appendix B, presents a summary of the correlation between sensitivity and mode of mobility. When these two variables were correlated, the relationship was found to be significant: $r \geq .396$, obtained $r = 0.5824$; number of cases - 25, 23 degrees of freedom. Within the limits of this study, those most free of the problems involved in this variable tended to use cane or dog guides as their mode of mobility. On the basis of computed data, the null hypothesis is rejected.

Problem 2: This problem involves the Bauman scale, somatic symptoms, and mode of mobility, variables 6 and 15. All subjects (twenty-five cases) were used in testing this hypothesis, with

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[1] For a description of the Bauman scale, see pages 67, 68, 69.

23 degrees of freedom. When a correlation was run between somatic symptoms and mode of mobility, it was found to be significant.

Table 10, Appendix B, presents a summary of the correlation between somatic symptoms and mode of mobility. When these two variables were correlated, the relationship was found to be significant: $r \geq .396$, obtained $r = 0.4731$; number of cases - 25, 23 degrees of freedom. Within the limits of this study, those most free of the problems involved in this variable tended to use cane or dog guide as their mode of mobility. On the basis of these data, the null hypothesis is rejected.

Problem 3: This problem involves the Bauman scale, social competency, and mode of mobility, variables 7 and 15. All subjects (25 cases) were used in testing this hypothesis, with 23 degrees of freedom. When a correlation was run between social competency and mode of mobility, it was found to be significant.

Table 11, Appendix B, presents a summary of the correlation between social competency and mode of mobility. When these two variables were correlated, the relationship was found to be significant: $r \geq .396$, obtained $r = 0.5442$; number of cases - 25, 23 degrees of freedom. Within the limits of this study, those most free of the problems involved in this variable tended to use cane or dog guide as their mode of mobility. On the basis of computed data, the null hypothesis is rejected.

Problem 4: This problem involves the Bauman scale, paranoid, and mode of mobility, variables 8 and 15. All subjects were used in testing this hypothesis, with 23 degrees of freedom. When a correlation was run between paranoid and mode of mobility, it was found to be significant.

Table 12, Appendix B, presents a summary of the correlation between paranoid and mode of mobility. When these two variables were correlated, the relationship was found to be significant: required r $\geq$ .396, obtained r = 0.4815; number of cases - 25, 23 degrees of freedom. Within the limits of this study, those most free of the problems involved in this variable tended to use cane or dog guide as their mode of mobility. On the basis of these data, the null hypothesis is rejected.

Problem 5: This problem involves the Bauman scale, inadequacy, and mode of mobility, variables, 9 and 15. All subjects (twenty-five cases) were used in testing this hypothesis, with 23 degrees of freedom. When a correlation was run between inadequacy and mode of mobility, it was found to be significant.

Table 13, Appendix B, presents a summary of the correlation between inadequacy and mode of mobility. When the two variables were correlated, the relationship was found to be significant: required r $\geq$ .396, obtained r = 0.5814; number of cases - 25, 23 degrees of freedom. Within the limits of this study, those most free of the problems involved in this variable, tended to use cane or dog guide as their mode of mobility. On the basis of these data, the null hypothesis is rejected.

Problem 6: This problem involves the Bauman scale, depression, and mode of mobility, variables 10 and 15. All subjects (twenty-five cases) were used in testing this hypothesis with 23 degrees of freedom. When a correlation was run between depression and mode of mobility, it was found to be significant.

Table 14, Appendix B, presents a summary of the correlation between depression and mode of mobility. When these two variables were correlated, the relationship was found to be significant: required $\geq .396$, obtained $r = 0.5955$; number of cases - 25, 23 degrees of freedom. Within the limits of this study, those most free of the problems involved in this variable had greater independence in mobility. On the basis of these data, the hypothesis is retained.

Problem 7: This problem involves the Bauman scale, blindness, and mode of mobility, variables 11 and 15. All subjects (twenty-five cases) were used in testing this hypothesis with 23 degrees of freedom. When a correlation was run between blindness and mode of mobility, it was found to be significant.

Table 15, Appendix B, presents a summary of the correlation between blindness and mode of mobility. When these two variables were correlated, the relationship was found to be significant: required $r \geq .396$, obtained $r = 0.5541$; number of cases - 25, 23 degrees of freedom. Within the limits of this study, those most free of the problems involved in this variable tended to use cane or dog guide as their mode of mobility. On the basis of these data, the null hypothesis is rejected.

Problem 8: This problem involves the Bauman scale, validation, and mode of mobility, variables 12 and 15. All subjects (twenty-five cases) were used in testing this hypothesis with 23 degrees of freedom. When a correlation was run between validation and mode of mobility, it was found to be significant.

Table 16, Appendix B, presents a summary of the correlation between validation and mode of mobility. When these two variables were correlated, the relationship was found to be significant: required $r \geq .396$, obtained $r = 0.5045$; number of cases - 25, 23 degrees of freedom. Within the limits of this study, those most free from the problems involved in this variable tended to use cane or dog guide as their mode of mobility. On the basis of these data, the null hypothesis is rejected.

All subscores on the Bauman scale had a significant relationship to mode of mobility. There was a positive relationship between mode of mobility and every subscore on the Bauman scale.

Hypothesis 6

There will be no significant difference between visual acuity and mode of mobility. This hypothesis involves the visual acuity and mode of mobility, variables 13 and 15. All subjects (twenty-five cases) were used in testing this hypothesis. When a correlation was run between visual acuity and mode of mobility, it was found to be significant.

Table 17, Appendix B, presents a summary of the correlation between visual acuity and mode of mobility. When these two variables were compared, the relationship was found to be significant: required $r \geq .396$, obtained $r = -0.6210$; number of cases - 25, 23 degrees of freedom. Within the limits of this study, it was found that those who were totally blind tended to use the cane or dog guide as a mode of mobility. A negative relationship was found between vision and mode of mobility. On the basis of these data, the null hypothesis is rejected.

Correlation of Special Dimension Scale (Certain Items on the Bauman Scale) and Independent-Dependency (as Perceived by the Professional Counselor) Tendency

The researcher inquired of Mary K. Bauman, author of the Emotional Factors Inventory, regarding whether the scale could be scored on a ninth category. This category was tendency toward dependency.

Bauman listed fifteen items from the scale which might show some correlation with the dependency factor.[1] Dependency scores on the Bauman scale were correlated with the rating of the subjects as independent, average, or dependent, as perceived by the professional interviewer. Table 3, Appendix B, shows the rating scale used.

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[1] Private correspondence from Mary K. Bauman to the researcher listed the items for a dependency category.

Bauman suggested that the following items from the Bauman scale, if answered "True," might show some correlation with the dependency factor. Item numbers 7, 14, 37, 48, 51, 62, 67, 75, 77, 91, 94, 96, 149, 151, and 156 were used to make a dependency category.

Table 18, Appendix B, presents a summary of the correlation between special dimension and rating on independence, variables 2 and 14. When these two variables were compared, the relationship was found to be significant: required $r \geq .396$, obtained $r = 0.6318$; number of cases - 25, 23 degrees of freedom. Within the limits of this study, it was found that when correlating the Bauman scale special dimension dependency factor category with independent judgment of an interviewer on dependency tendency, a significant relationship was reached. Those who were rated as having a dependency tendency on the Bauman scale, special dimension, were rated by the interviewer as exhibiting a dependency tendency.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to investigate a number of variables in the backgrounds of blind individuals. A test was made to see if there was a relationship between a number of variables and mode of mobility. The study attempted to determine which of a number of variables were present in visually handicapped individuals using one of the selected modes of mobility.

Twelve variables were correlated with mode of mobility. The independence variable was correlated with the special dimension variable. The backgrounds of twenty-five cases were studied, tested, and compared. Through this comparison, an endeavor was made to determine whether certain factors seemed to be more strongly operative in the backgrounds of individuals using the cane or dog guide and whether the factors were lacking in those persons using a human guide.

The following are the fourteen selected variables: (1) IQ and mode of mobility, (2) rating on independence and mode of mobility, (3) additional physical disabilities and mode of mobility, (4) family attitudes and mode of mobility. Each of eight categories of the Bauman scale was correlated with mode of mobility (5) sensitivity, (6) somatic symptoms, (7) social competency and interest in social contacts, (8) paranoid tendencies, (9) feelings of inadequacy, (10) depression, (11) attitudes toward blindness, and (12) validity. Other selected variables used were: (13) visual acuity and (4) special dimension and dependency factor.

The subjects used in this study were clients at the Department of Rehabilitation, Division of Services for the Blind, Denver, Colorado. All subjects used in the study qualified under the medical definition for blindness. The subjects used one of three modes of travel: (1) cane, (2) dog guide, or (3) human guide. Subjects were placed in an arbitrarily delineated dichotomy. Group I contained fifteen subjects who were either cane or dog guide users; Group II contained ten subjects who qualified as human guide users.

Findings

The findings in this chapter will be reported in the same order or sequence as the hypotheses which were stated in Chapter I and re-stated in Chapter IV.

Initial correlations revealed no intercorrelations on one of the fourteen variables being investigated for correlation with mode of mobility. The study was unable to establish a relationship between family attitudes and mode of mobility. The number of cases used in this correlation was twenty; the correlation was non-significant at the .05 level.

The initial correlations of the fourteen variables under investigation for correlation with mode of mobility did reveal intercorrelations with regard to IQ, dependency rating, additional physical disabilities, sensitivity, somatic symptoms, social competency and interest in social contacts, paranoid tendencies, feelings of inadequacy, depression, attitudes toward blindness, validity, and visual acuity. The rating on independence and special dimension revealed an intercorrelation.

Thepopulation in this study was divided into two groups on the basis of mode of mobility. Group I included fifteen subjects who used either the cane or dog guide as their mode of mobility. Group II included ten subjects who used as their mode of mobility a human guide.

Hypothesis 1

When the IQ and mode of mobility variables were correlated, the result was significant. An r of 0.6303 revealed significance at the .05 level; number of cases - 25, 23 degrees of freedom. Group I included fifteen subjects whose IQ ranged from 95 to 126. Four subjects had an IQ below 110. The IQ's in Group I tended to fall in theabove average range with a mean of 115.88. Group II included ten subjects whose IQ ranged from 84 to 117. Nine subjects had an IQ below 110. The IQ's in Group II tended to fall in the average range with a mean of 99.80.

Hypothesis 2

When the dependency rating and mode of mobility variables were correlated, the result was significant. Those rated as independent used a cane or dog guide as a mode of mobility. A negative relationship exists between dependency rating and human guide as a mode of mobility. An r of -0.5804 revealed significance at the .05 level; number of cases - 25; 23 degrees of freedom.

Hypothesis 3

When the additional physical disabilities and mode of mobility variables were correlated, the result was significant. A negative relationship exists between additional health problems and mode of mobility. An r of -0.5804 revealed significance at the .05 level; number of cases - 25, 23 degrees of freedom.

Hypothesis 4

When the family attitudes and mode of mobility variables were correlated, no relationship was found. This study was unable to establish a relationship between family attitudes and mode of mobility at the .05 level. There were 20 cases with 18 degrees of freedom.

Hypothesis 5, Problem 1

When the sensitivity and mode of mobility variables were correlated, the result was significant. An r of 0.5824 revealed significance at the .05 level; number of cases - 25, 23 degrees of freedom.

Hypothesis 5, Problem 2

When the somatic symptoms and mode of mobility variables were correlated, the result was significant. An r of 0.4731 revealed significance at the .05 level; number of cases - 25, 23 degrees of freedom.

Hypothesis 5, Problem 3

When the social competency and mode of mobility variables were correlated, the result was significant. An r of 0.5442 revealed significance at the .05 level; number of cases - 25, 23 degrees of freedom.

Hypothesis 5, Problem 4

When the paranoid tendencies and mode of mobility variables were correlated, the result was significant. An r of 0.4815 revealed significance at the .05 level. The less paranoid, the more mobile. There were twenty-five cases with 23degrees of freedom.

Hypothesis 5, Problem 5

When the inadequacy and mode of mobility variables were correlated, the result was significant. An r of 0.5814 revealed significance at the .05 level; number of cases - 25, 23degrees of freedom.

Hypothesis 5, Problem 6

When the depression and mode of mobility variables were correlated, the result was significant. An r of 0.5955 revealed significance at the .05 level; number of cases 25, 23degrees of freedom.

Hypothesis 5, Problem 7

When the blindness and mode of mobility variables were correlated, the result was significant. An r of 0.5541 revealed significance at the .05 level; number of cases - 25, 23 degrees of freedom.

Hypothesis 5, Problem 8

When the validation and mode of mobility variables were correlated, the result was significant. An r of 0.5045 revealed significance at the .05 level; number of cases - 25, 23 degrees of freedom.

Hypothesis 6

When the vision and mode of mobility variables were correlated, the result was significant. A negative correlation resulted. Those who were totally blind tended to be more mobile. An r of -0.6210 revealed significance at the .05 level; number of cases - 25, 23 degrees of freedom.

Bauman special dimension scale (dependency tendency) and dependency rating

When the special dimension and dependency variables were correlated, the relationship was significant. An r of 0.6318 revealed significance at the .05 level; number of cases - 25, 23 degrees of freedom.

Conclusions

The concluding statements are based on the results of the correlations between mode of mobility and fifteen variables. Conclusions drawn from this study apply only to this population and inferences to other populations are not implied or suggested.

1. The IQ's of those in Group I tended to be above average; those in Group II tended to be average. According to the data in this study, it would appear that those with a higher IQ tended to select the cane or dog guide as a mode of mobility. Within the limits of this study, it would appear that a higher IQ tends to be present in those persons using the cane or dog guide as a mobility device. It would, of course, be necessary to do additional research using these variables if a more positive statement were to be made.
2. There was evidence that blind individuals rated as independent tended to select the cane or dog guide as a mode

of mobility. Within the limits of this study, those persons who were more dependent tended to use human guides.

3. The results of this study would indicate that a negative relationship exists between additional health problems and mode of mobility. Individuals with additional health problems appear to select the human guide.
4. Within the limits of this study, family attitudes as perceived by the subject concerning his efforts toward a greater degree of mobility did not affect the subject's mode of mobility. This study appears to have been unable to establish a relationship between family attitudes and mode of mobility. Perhaps this was due in part to the fact that this population of visually impaired individuals had families who were interested in their welfare. This was perhaps evidenced by these visually impaired individuals being clients of the Department of Rehabilitation, Division of Services for the Blind, Denver, Colorado.
5. According to the results of this study, there was a positive relationship between mode of mobility and every subscore on the Bauman scale. Those who selected the cane or dog guide as a mode of mobility tended to rate higher on the Bauman scale.
6. It would appear that those who were totally blind tended

to use the cane or dog guide, within the limits of this study.

7. There appears to be evidence that some relationship does exist between the independent judgment made by the trained rehabilitation counselor and the items on the Bauman scale which were used to indicate a possible dependency tendency. It should not be assumed that a dependency tendency was measured by the selected items from the Bauman scale until the results from a number of clients can be tabulated. These results also would have to be validated against some evidence in the clients' lives.

Recommendations

1. It is recommended that additional testing of the two variables of hearing and mode of mobility be conducted to determine if a relationship does exist between hearing and mobility.
2. It is recommended that additional testing be made to determine if a relationship between family attitudes and mode of mobility does exist.
3. It is recommended that additional tests be made to determine if non-supportive family attitudes toward mobility can be overcome.

4. It is recommended that additional studies be made to ascertain if a point exists in the life of the blind individual when non-supportive family attitudes toward mobility are overcome.
5. It is recommended that additional research be done in an effort to determine how non-supportive family attitudes toward mobility independence are overcome.
6. It is recommended that additional studies be made to determine if the special dimension scale composed of selected items from the Bauman scale can be used to measure a dependency tendency in clients.

APPENDIX A

May 5, 1967

Dear

Mr. Charles Ritter of the Colorado Rehabilitation for the Blind has given me your name and has said that you would be willing to cooperate in a study on the mobility of the blind.

I would like to interview you and give a short list of questions. May I call to interview you on ______________________ at ____________? Yes_________ No__________ Please check your answer and return in the enclosed stamped envelope.

Thanking you in advance for your cooperation and prompt reply.

Sincerely,

Mrs. Bobbe Lytle Davey
1512 - 11th Avenue
Greeley, Colorado

ADMINISTRATION OF THE BAUMAN SCALE

Although the questions contained in the Bauman Scale can be read to a subject, a tape recorder was used to administer the test. The tape recorder saved the time of the examiner and gave the subject a feeling of privacy. Bauman encouraged the use of the tape recorder.

Bauman suggests, in dictating the items of the scale, care should be exercised to speak naturally, clearly, and with no change in emphasis from one item to the next. The author of the scale further suggests that each item be dictated twice, so that the subject would be sure to understand.[1]

The following directions were recorded on the tape recorder preceding the items to be answered.

> You have been given a deck of numbered cards. As each sentence is read to you, decide if it is true for you or untrue. If the sentence read is true for you, place the top card in the deck to the right in front of you. If the sentence read is untrue for you, place the top card in the deck to the left in front of you. Each sentence will be read twice to be sure that you understand. You are to decide whether, in most cases, each of the following statements is true for you or untrue for you. Indicate your responses by placing the card to the right in front of you for true or to the left in front of you for untrue.

---

[1] Mary K. Bauman, The Emotional Factor Inventory (Philadelphia, Pennsylvania: Personnel Research Center).

APPENDIX B

TABLE 1

POPULATION DESCRIPTION

Category	No.	Total
Male	12	
Female	13	25
Married	20	
Single	3	
Have been married	2	25
Employed	15	
Unemployed	10	25
Congenitally blind	6	
Blinded before five years old	4	
Blinded between ages five to fifteen	5	
Blinded between ages sixteen to twenty	4	
Blinded after age thirty	6	25
Did not finish high school	0	
Finished high school but no academic work beyond high school	21	
B.A. or B.S. degree	3	
M.A. or M.S. degree	1	25
Age eighteen to twenty-five	5	
Age twenty-six to thirty-five	6	
Age thirty-six to forty-five	4	
Age forty-six to fifty-five	6	
Age fifty-six to sixty-five	3	
Age sixty-six to seventy	1	25
Uses a dog guide	6	
Uses a cane	9	
Uses a human guide	10	25
Visual acuity--totally blind	12	
Visual acuity--light perception	13	25
Race--White	24	
Race--Colored	1	25
Nationality--mixed origins	22	
Nationality--Spanish-American	3	25

TABLE 2

RATING SCALE FOR PERCEIVED PARENTAL ATTITUDES TOWARD TRAVEL TRAINING AND INDEPENDENT TRAVEL

1.	Very highly supportive :	Above average
2.	Highly supportive :	
3.	Moderately supportive :	
4.	Only mildly supportive :	
5.	Only mildly non-supportive :	Below average
6.	Moderately non-supportive :	
7.	Highly non-supportive :	
8.	Very highly non-supportive :	

TABLE 3

RATING SCALE FOR INDEPENDENCE OR DEPENDENCY TENDENCIES OF THE SUBJECTS AS PERCEIVED BY THE PROFESSIONAL INTERVIEWER

1. Independent	Above average
2. Mildly independent	Average
3. Mildly dependent	
4. Dependent	Below average

TABLE 4

VARIABLES USED IN THE STUDY

1. IQ score
2. Rating on independence (dependency factor)
3. Additional physical disabilities
4. Family attitudes
5. Bauman scale, sensitivity score
6. Bauman scale, somatic symptoms score
7. Bauman scale, social competency score
8. Bauman scale, paranoid score
9. Bauman scale, inadequacy score
10. Bauman scale, depression score
11. Bauman scale, blindness score
12. Bauman scale, validation score
13. Vision
14. Special dimension score (certain items from the Bauman scale which tend to correlate with the dependency factor)
15. Mode of mobility

TABLE 5

SIGNIFICANCE OF CORRELATIONS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																.396[a] .6303[b]
2															.396[a] .6318[b]	.396 -.5804
3																.396 -.5804
4	Not significant[c]															
5																.396 .5824
6																.396 .4731
7																.396 .5442
8																.396 .4815
9																.396 .5814
10																.396 .5955
11																.396 .5541
12																.396 .5045
13																.396 -.6210
14																
15																

[a] Required r at the .05 level of significance, r   .396.

[b] Obtained r at the .05 level of significance, for these variables.

[c] Variable 4, 20 cases; remaining variables, 25 cases.

TABLE 6

IQ AND MODE OF MOBILITY

Variables	.05 Level of Significance	Obtained r	No. of Cases	df
1 and 15	r .396	0.6303[a]	25	23

[a] Significant at .05 level.

TABLE 7

DEPENDENCY RATING AND MODE OF MOBILITY

Variables	.05 Level of Significance	Obtained r	No. of Cases	df
2 and 15	.396	-0.5804[a]	25	23

[a] Significant at .05 level.

TABLE 8

ADDITIONAL PHYSICAL DISABILITIES AND MODE OF MOBILITY

Variables	.05 Level of Significance	Obtained r	No. of Cases	df
3 and 15	.396	-0.5804[a]	25	23

[a]Significant at .05 level.

TABLE 9

BAUMAN SCALE, SENSITIVITY AND MODE OF MOBILITY

Variables	.05 Level of Significance	Obtained r	No. of Cases	df
5 and 15	.396	0.5824[a]	25	23

[a]Significant at .05 level.

TABLE 10

BAUMAN SCALE, SOMATIC SYMPTOMS AND MODE OF MOBILITY

Variables	.05 Level of Significance	Obtained r	No. of Cases	df
6 and 15	.396	0.4731[a]	25	23

[a] Significant at the .05 level.

TABLE 11

BAUMAN SCALE, SOCIAL COMPETENCY AND MODE OF MOBILITY

Variables	.05 Level of Significance	Obtained r	No. of Cases	df
7 and 15	.396	0.5442[a]	25	23

[a] Significant at the .05 level.

TABLE 12

BAUMAN SCALE, PARANOID AND MODE OF MOBILITY

Variables	.05 Level of Significance	Obtained r	No. of Cases	df
8 and 15	.396	0.4815[a]	25	23

[a] Significant at the .05 level.

TABLE 13

BAUMAN SCALE, INADEQUACY AND MODE OF MOBILITY

Variables	.05 Level of Significance	Obtained r	No. of Cases	df
9 and 15	.396	0.5814[a]	25	23

[a] Significant at the .05 level.

TABLE 14

BAUMAN SCALE, DEPRESSION AND MODE OF MOBILITY

Variables	.05 Level of Significance	Obtained r	No. of Cases	df
10 and 15	.396	0.5955[a]	25	23

[a] Significant at .05 level.

TABLE 15

BAUMAN SCALE, BLINDNESS AND MODE OF MOBILITY

Variables	.05 Level of Significance	Obtained r	No. of Cases	df
11 and 15	.396	0.5541[a]	25	23

[a] Significant at .05 level.

TABLE 16

BAUMAN SCALE, VALIDATION AND MODE OF MOBILITY

Variables	.05 Level of Significance	Obtained r	No. of Cases	df
12 and 15	.396	0.5045[a]	25	23

[a] Significant at .05 level.

TABLE 17

VISION AND MODE OF MOBILITY

Variables	.05 Level of Significance	Obtained 4	No. of Cases	df
13 and 15	.396	-0.6210[a]	25	23

[a] Significant at .05 level.

C

TABLE 18

SPECIAL DIMENSION SOCRE (CERTAIN ITEMS FROM BAUMAN SCALE WHICH TEND TO CORRELATE WITH DEPENDENCY FACTOR)

Variables	.05 Level of Significance	Obtained r	No. of Cases	df
2 and 14	.396	0.6318[a]	25	23

[a] Significant at .05 level.

APPENDIX C

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VETERANS ADMINISTRATION

Department of Medicine and Surgery

Washington, D. C.

August 3, 1966

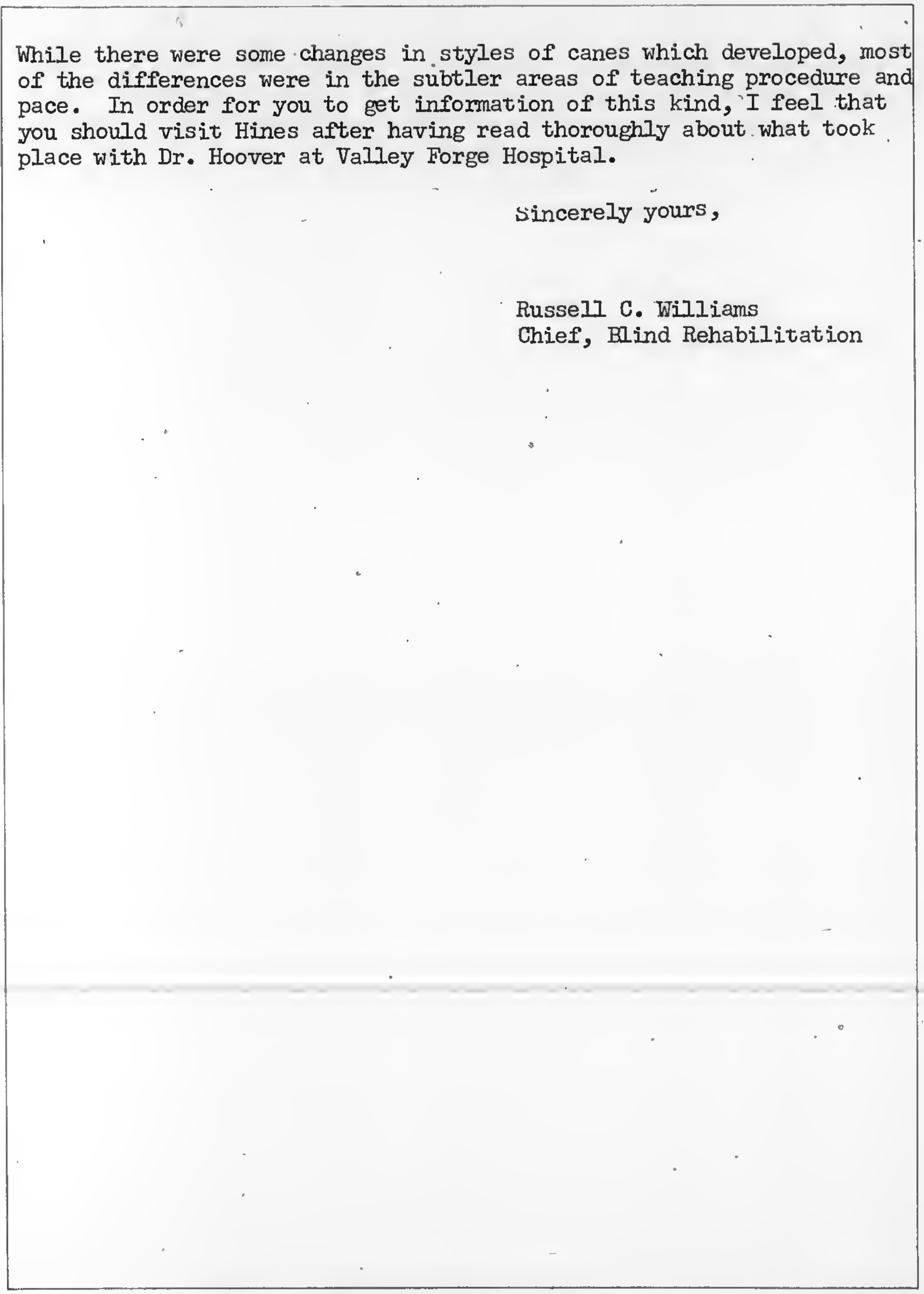
Mrs. Bobbe Davey
1512 - 11th Avenue
Greeley, Colorado 86031

Dear Mrs. Davey:

There have been a great many things written by and about Dr. Hoover over the years in connection with his part in orientation and mobility of blind people. One chapter on the cane by Hoover in Paul Zahl's book, Blindness, is a good one to read. I think, however, that you would do well to ask the American Association of Workers for the Blind, 1511 K Street, NW, Washington, D.C., for other references on Dr. Hoover and the subject from their Blindiana.

Your second inquiry about changes made while I was at Hines involves too much for a letter of this kind, and will not be found in any degree of completeness in journals and texts. I think you will see what I mean when I point out that some changes grew out of the differences in basic program circumstances between the one Dr. Hoover administered and in which I was a participant, and the one at Hines in which I was an administrator.

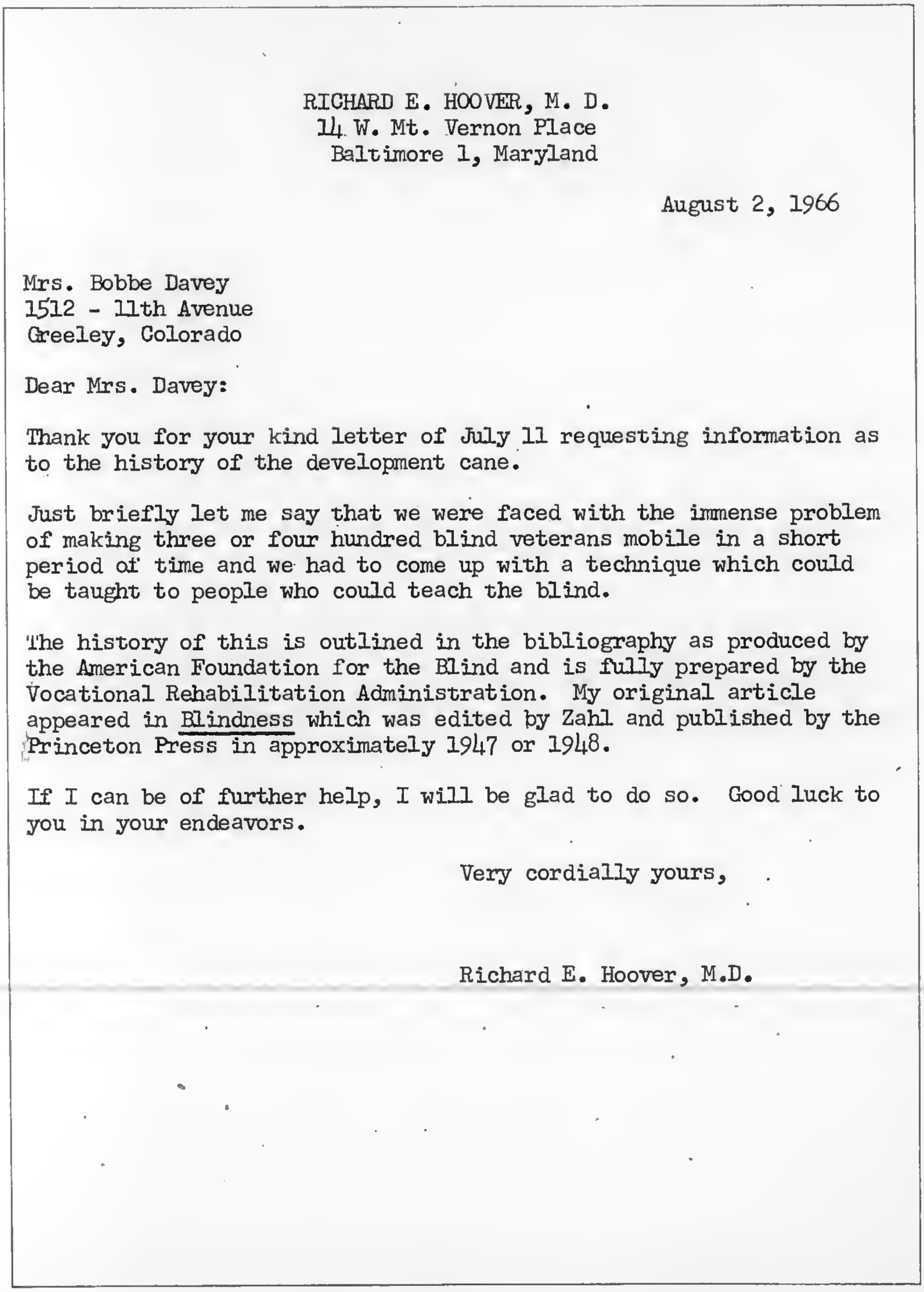
Veterans were at Hines primarily for rehabilitation, and they were at Valley Forge Hospital primarily for eye and other medical care. The program at Valley Forge was provided and paced around surgical and other treatment schedules while at Hines all participation was in rehabilitation to them or else they departed the program. They have to show some effort and accomplishment or they are separated from it. No requirement existed at Valley Forge that servicemen engage in mobility, and, if they did, it was the medical treatment schedules which determined when they departed the hospital rather than their rehabilitation accomplishments.



While there were some changes in styles of canes which developed, most of the differences were in the subtler areas of teaching procedure and pace. In order for you to get information of this kind, I feel that you should visit Hines after having read thoroughly about what took place with Dr. Hoover at Valley Forge Hospital.

Sincerely yours,

Russell C. Williams
Chief, Blind Rehabilitation



RICHARD E. HOOVER, M. D.
14 W. Mt. Vernon Place
Baltimore 1, Maryland

August 2, 1966

Mrs. Bobbe Davey
1512 - 11th Avenue
Greeley, Colorado

Dear Mrs. Davey:

Thank you for your kind letter of July 11 requesting information as to the history of the development cane.

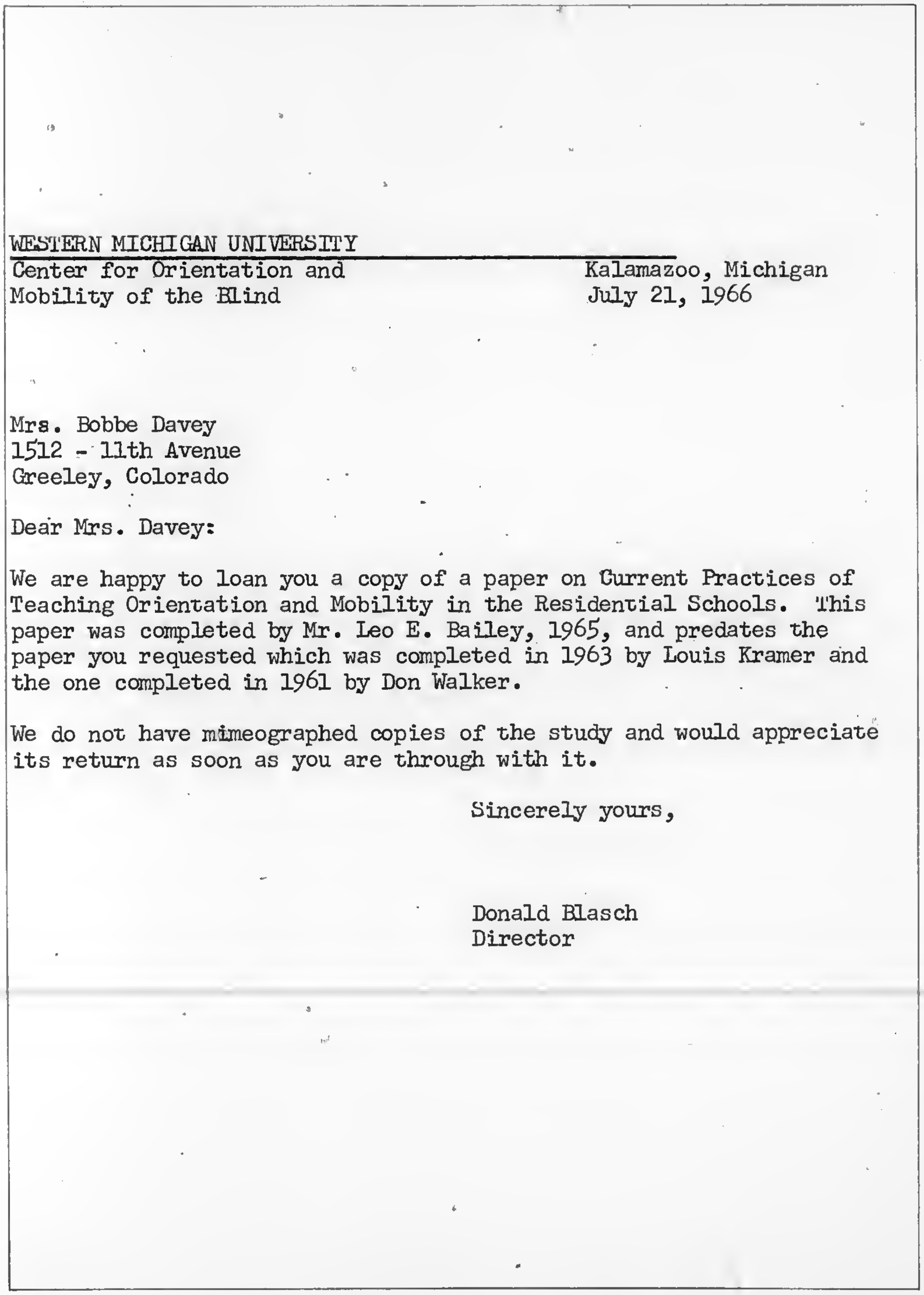
Just briefly let me say that we were faced with the immense problem of making three or four hundred blind veterans mobile in a short period of time and we had to come up with a technique which could be taught to people who could teach the blind.

The history of this is outlined in the bibliography as produced by the American Foundation for the Blind and is fully prepared by the Vocational Rehabilitation Administration. My original article appeared in Blindness which was edited by Zahl and published by the Princeton Press in approximately 1947 or 1948.

If I can be of further help, I will be glad to do so. Good luck to you in your endeavors.

Very cordially yours,

Richard E. Hoover, M.D.



WESTERN MICHIGAN UNIVERSITY
Center for Orientation and
Mobility of the Blind

Kalamazoo, Michigan
July 21, 1966

Mrs. Bobbe Davey
1512 - 11th Avenue
Greeley, Colorado

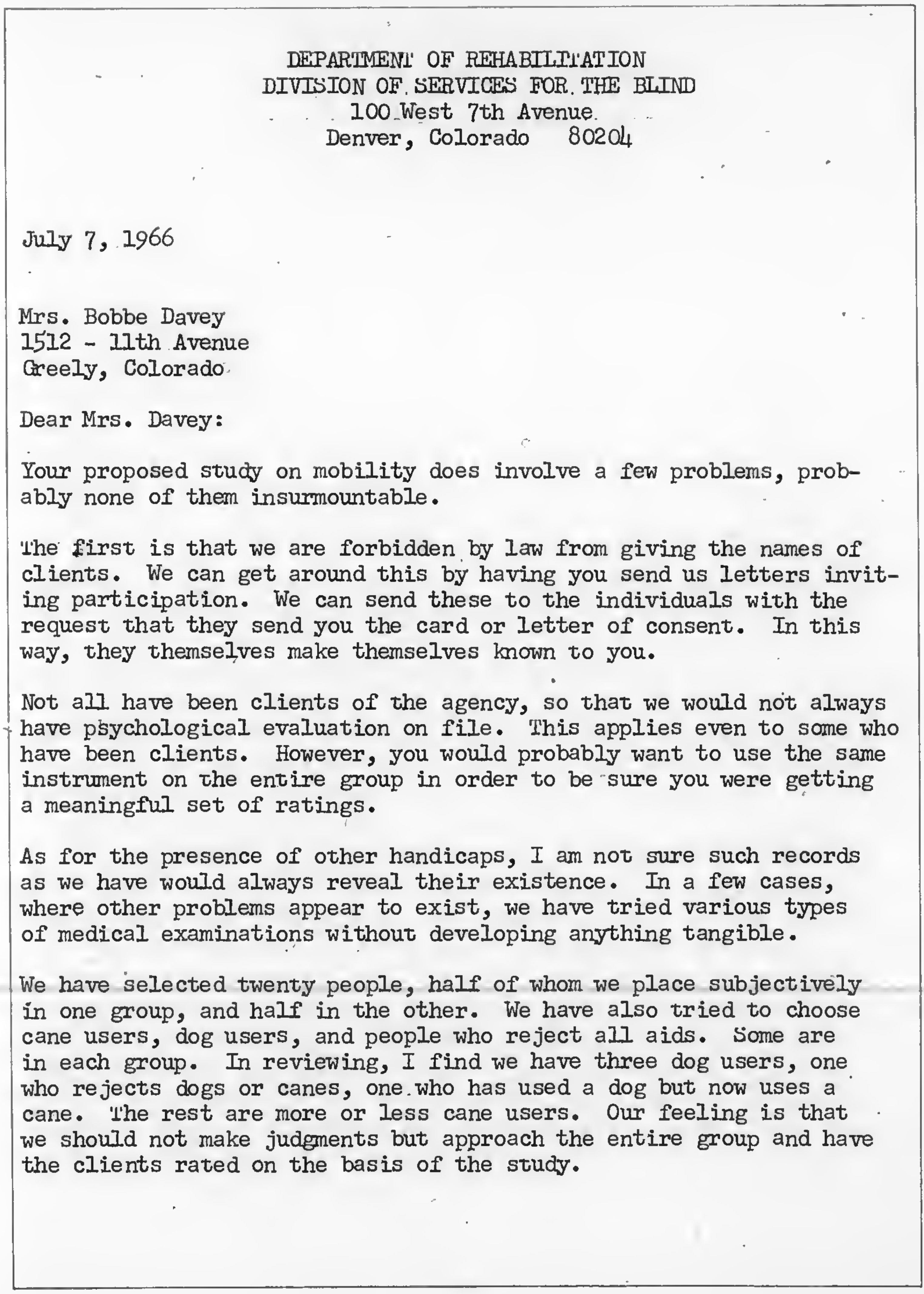
Dear Mrs. Davey:

We are happy to loan you a copy of a paper on Current Practices of Teaching Orientation and Mobility in the Residential Schools. This paper was completed by Mr. Leo E. Bailey, 1965, and predates the paper you requested which was completed in 1963 by Louis Kramer and the one completed in 1961 by Don Walker.

We do not have mimeographed copies of the study and would appreciate its return as soon as you are through with it.

Sincerely yours,

Donald Blasch
Director



DEPARTMENT OF REHABILITATION
DIVISION OF SERVICES FOR THE BLIND
100 West 7th Avenue
Denver, Colorado 80204

July 7, 1966

Mrs. Bobbe Davey
1512 - 11th Avenue
Greely, Colorado

Dear Mrs. Davey:

Your proposed study on mobility does involve a few problems, probably none of them insurmountable.

The first is that we are forbidden by law from giving the names of clients. We can get around this by having you send us letters inviting participation. We can send these to the individuals with the request that they send you the card or letter of consent. In this way, they themselves make themselves known to you.

Not all have been clients of the agency, so that we would not always have psychological evaluation on file. This applies even to some who have been clients. However, you would probably want to use the same instrument on the entire group in order to be sure you were getting a meaningful set of ratings.

As for the presence of other handicaps, I am not sure such records as we have would always reveal their existence. In a few cases, where other problems appear to exist, we have tried various types of medical examinations without developing anything tangible.

We have selected twenty people, half of whom we place subjectively in one group, and half in the other. We have also tried to choose cane users, dog users, and people who reject all aids. Some are in each group. In reviewing, I find we have three dog users, one who rejects dogs or canes, one who has used a dog but now uses a cane. The rest are more or less cane users. Our feeling is that we should not make judgments but approach the entire group and have the clients rated on the basis of the study.

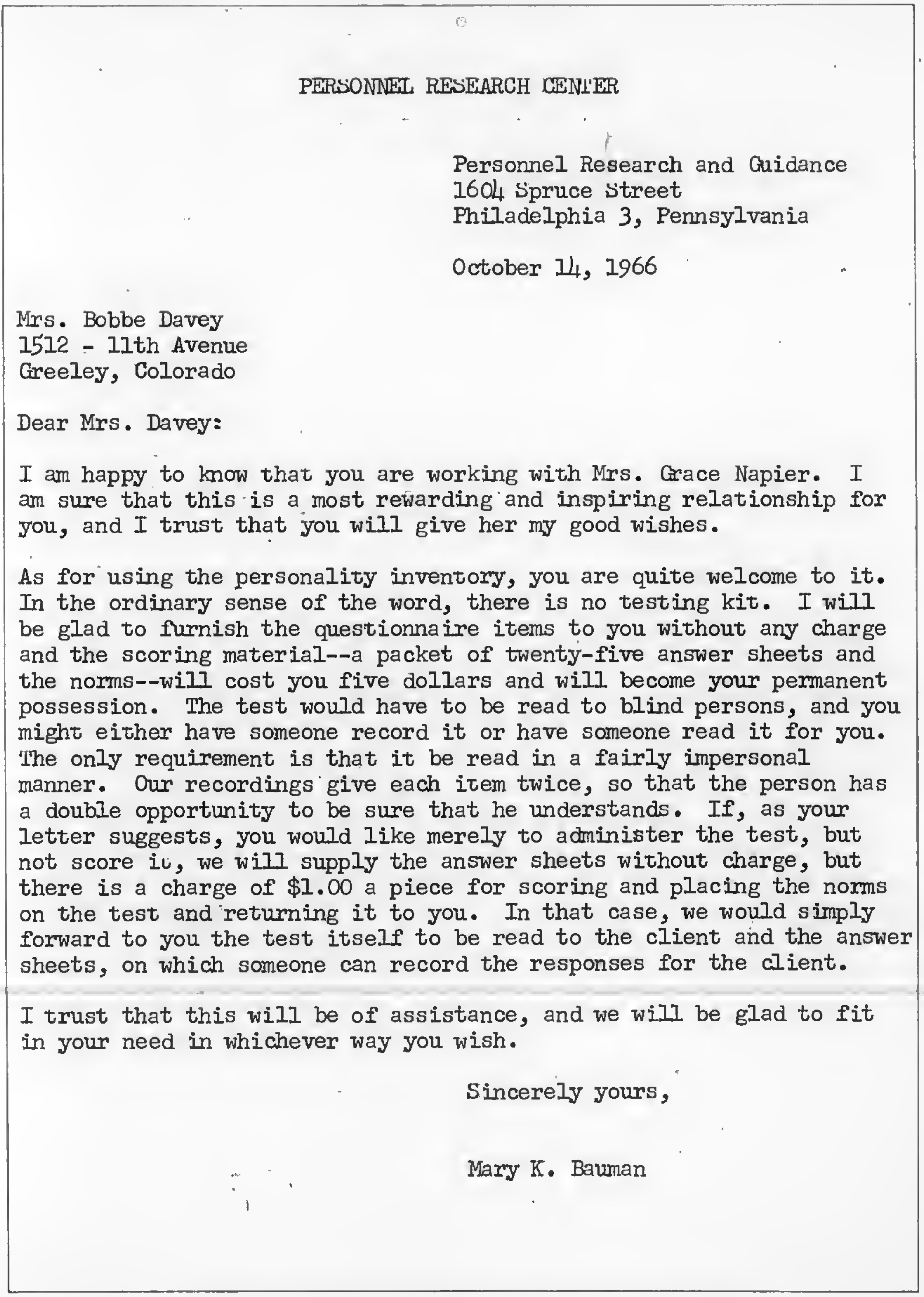
Another consideration is that half those selected are working so that any involvements would have to be in the evenings.

When you draft a letter it would be desirable to have you spell out what the study would involve in terms of client time and effort, as well as what the value of the study might be in terms of the future of mobility. Then perhaps the client responses could cover some of the first steps in the study. This would encourage response.

We shall be glad to hear your reactions to this letter.

Sincerely yours,

Charles G. Ritter, Supervisor
Rehabilitation for the blind



PERSONNEL RESEARCH CENTER

Personnel Research and Guidance
1604 Spruce Street
Philadelphia 3, Pennsylvania

October 14, 1966

Mrs. Bobbe Davey
1512 - 11th Avenue
Greeley, Colorado

Dear Mrs. Davey:

I am happy to know that you are working with Mrs. Grace Napier. I am sure that this is a most rewarding and inspiring relationship for you, and I trust that you will give her my good wishes.

As for using the personality inventory, you are quite welcome to it. In the ordinary sense of the word, there is no testing kit. I will be glad to furnish the questionnaire items to you without any charge and the scoring material--a packet of twenty-five answer sheets and the norms--will cost you five dollars and will become your permanent possession. The test would have to be read to blind persons, and you might either have someone record it or have someone read it for you. The only requirement is that it be read in a fairly impersonal manner. Our recordings give each item twice, so that the person has a double opportunity to be sure that he understands. If, as your letter suggests, you would like merely to administer the test, but not score it, we will supply the answer sheets without charge, but there is a charge of $1.00 a piece for scoring and placing the norms on the test and returning it to you. In that case, we would simply forward to you the test itself to be read to the client and the answer sheets, on which someone can record the responses for the client.

I trust that this will be of assistance, and we will be glad to fit in your need in whichever way you wish.

Sincerely yours,

Mary K. Bauman

THE SEEING EYE, INC., Morristown, New Jersey

July 7, 1966

Mrs. Bobbe Davey
1512 - 11th Avenue
Greeley, Colorado

Dear Mrs. Davey:

As requested in your letter of July 4, we are pleased to send you, under separate cover, several pieces of Seeing Eye literature which we hope you will find helpful in your work. Also enclosed is a bibliography on which we have checked the more definitive publications about the Seeing Eye.

We would like to refer you to Blindness, 1964, the yearbook of the American Association of Workers for the Blind, in which an article by Martha Ball, entitled "History of Mobility," appears. We think you will find this of great assistance in the study you are doing "in the area of mobility in the blind."

Thank you for your interest in the Seeing Eye and we send our best wishes to you for the successful completion of your doctoral studies.

Sincerely yours,

George Werntz, Jr.

THE ISRAEL INSTITUTE FOR ORIENTATION AND
MOBILITY OF THE BLIND

Departments for Cane Travel and for Guide Dogs
Founder and Director: Prof. Dr. Rudolphina Menzel

Our Ref: 1945/R

Date: 18/9/66

Mrs. Bobbe Davey
1512 - 11th Avenue
Greeley, Colorado, USA

Dear Mrs. Davey:

Thanking you for your letter of September 9, I wish to inform you that our new Test Form will be ready shortly.

We shall be glad to send you a copy after completion.

Sincerely yours,

Prof. Dr. R. Menzel

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VITA

Name: (Mrs.) Bobbe Lytle Davey

Birthplace: St. Louis, Missouri

Birthdate: August 25, 1923

Parents: Ralph and Lulu Lytle

Children: Ted, 15 years
Mike, 10½ years
Tom, 9 years

Undergraduate Studies: B.M., Bethany College, Lindsborg, Kansas

(Liberal Arts) Gonzaga University, Spokane, Washington

B.A., Eastern Washington State College, Cheney, Washington

Graduate Studies: M.A., Colorado State College, Greeley, Colorado

Ed.D., Colorado State College, Greeley, Colorado

Teaching Experience:
Teacher, Couer d'Alene, Idaho, Public Schools
Teacher of the severely culturally deprived and disadvantaged (slum area of the city), including depressed IQ, Spokane, Washington, Public Schools
Critic teacher under the University of Idaho, Moscow, Idaho, Public Schools
Teacher, Orchard Avenue Public Schools, Millwood, Washington
Teacher, Opportunity Cooperative Kindergarten (Private), Opportunity, Washington
Itinerant teacher of the blind and physically handicapped, Reorganized School District No. 7, Kersey, Colorado
Asst. Principal, Reorganized School District No. 7, Kersey, Colorado
Asst. Professor, School of Education, Department for the Visually Handicapped, Old Dominion College (parent college, William and Mary), Norfolk, Virginia

Professional
Memberships: Pi Kappa Delta
Kappa Delta Pi
Council for Exceptional Children
American Association of Instructors for the Blind
American Association of Workers for the Blind
National Education Association
Parent Teachers Association

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